An evaluation of biodiversity policy development and implementation in Thailand

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Abstract

The problem of biodiversity loss has been raised as a significant global issue for several years. There have been many significant attempts to cooperate at an international level. The Convention on Biological Diversity (CBD) was launched as a mechanism for multinational cooperation for global biodiversity conservation at international policy level among the signatory parties. Despite the formulation of the CBD, biodiversity policy has suffered in its framework, institution and practices. Biodiversity has continued being destroyed at a rapid rate. Previous research on biodiversity policy evaluation studied only some parts of the policy cycle but did not point out the strengths and weaknesses clearly leading to difficulties in holistic policy cycle of both formulation and implementation.

This thesis evaluates effectiveness of biodiversity policy in Thailand as a signatory nation of CBD, principally in Indo-Burma and Sundaland biodiversity hotspots. They are important as a reservoir of the richest but most threatened plants and animals. While biosphere reserve has been established to allow locals utilising biodiversity as well as conservation, biodiversity threats have continuously been found. The policy was formulated and implemented to conserve them. The research was conducted to address this gap by thoroughly investigating the policy cycle in the development, implementation and evaluation of biodiversity policy, which truly reflecting political, socio-economic, cultural and environmental contexts. Thailand was taken as a case study and within this, three culturally diverse geographic locations were selected: North, Northeast and South biosphere reserves reflecting different ecosystems and cultures. This offered a detailed and complex analysis of development and implementation of the biodiversity policy throughout Thailand. An inductive approach and qualitative methods were applied using in-depth semi-structured and unstructured interviews with policy makers, decision makers, as well as focus groups with local stakeholders through the application of culturally sensitive policy evaluation methods.

The findings suggested that biodiversity policy implementation failed in Thailand and policy formulation had a low level of participation from the locals. Local stakeholders demonstrated little engagement with the need for biodiversity information from the government. Bureaucrats, decision makers and policy developers also shared little enthusiasm for initiating effective policy. It is important that awareness raising and education enhancement, particularly with children so that they will learn from early age. At local level, the policy must be carefully implemented to engage local stakeholders in biodiversity conservation. It is significant that biodiversity policy will be effective if it applies a bottom-up approach and requires grassroots participation. The recommendations for biodiversity policy, in the long term, the government should take into account local views towards national policy and bring this to the international level to achieve sustainable biodiversity conservation. Thus, it offers new insights into the success or failure of biodiversity policy in developing countries that was affected by cultural factors which must be taken into account during the entire policy cycle by the international community.

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Abbreviations

ASEAN Association of Southeast Asia Nations

BCST Bird Conservation Society of Thailand

BE Buddhist Era

BIOTEC the National Centre for Genetic Engineering and Biotechnology

BRT Biodiversity Research and Training

CBD Convention on Biological Diversity

CEPF Critical Ecosystem Partnership Fund

CHM Clearing House Mechanism

CI Conservation International

CITES Convention on International Trade in Endangered Species

COP Conference of the Parties

DEQP Department of Environmental Quality Promotion

DMCR Department Marine Coastal Resources

DNP Department of National Park

FAO Federation Agriculture Organisation

HRDI Highland Research Development Institute

IUCN International Union for Conservation of Nature

JAICA Japanese International Cooperation Agency

JBA Japan Bioindustry Association

MAB Man and the Biosphere

MOAC Ministry of Agriculture and Cooperatives

MONRE Ministry of Natural Resources and Environment

MOST Ministry of Science and Technology

MOSTE Ministry of Science, Technology and the Environment

NBSAP National Biodiversity Strategic and Action Plan

NCCUB National Committee on the Conservation and Utilisation of Biodiversity

NEB National Environmental Board

NEDO New Energy and Industrial Technology Development Organization

NEQA National Environmental Quality Act

NESDP National Economic and Social Development Plan

NGO Non-Governmental Organisations

NRENR Natural Resources and Environment Nakhon Ratchasima

OCSC Office of Civil Service Commission

OEPP Office of Environmental Policy and Planning

ONEP Office of the Natural Resources and Environmental Policy and Planning

PARO 7 Protected Area Regional Office

PCD Pollution Control Department

REO11 Regional Environmental Office

RFD Royal Forestry Department

SAO Subdistrict Administrative Organisation

SBSTTA Subsidiary Body on Scientific, Technical and Technological Advice

TBC Thailand Biodiversity Centre

TEI Thailand Environmental Institute

TISTR Thailand Institute of Science and Technology Research

UNCED United Nations Conference on the Environment and Development

UNDP United Nations Development Programme

UNEP United Nations Environment Programme

UNESCO United Nations Educational, Scientific and Cultural Organization

UNFCCC United Nations Framework Convention on Climate Change

UNODC United Nations Office on Drugs and Crime

WNBR World Network of Biosphere Reserves

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Chapter 1 Introduction to Biodiversity

1.1 Introduction

Biodiversity conservation has become global concern and that each country attempts to protect biodiversity from exploitation. At national level, biodiversity policy plays a key role to maintain biodiversity conservation and ensures that its implementation is effectively enforced. For this reason, the biodiversity policy has been evaluated to investigate and examine its process. To carry out this study, the main objectives of this thesis are to examine and evaluate the practice of a biodiversity policy and implementation process in the particular context of Thailand as well as to make recommendations to improve this issue and it could be example for other countries as well. This chapter aims to provide an overview of biodiversity and its importance. Moreover, it also presents the concept of biodiversity hotspots and biosphere reserve in biodiversity conservation. The chapter demonstrates the rationale for a study of biodiversity policy evaluation, focusing on the process of the policy that is significant as a means of biodiversity conservation. This chapter also justifies the overall aim and objectives of the thesis and lists the research questions in order to analysed and evaluate how biodiversity policy is being formulated and whether effectively implemented regarding biodiversity conservation. The outline of the thesis is also presented in this chapter.

1.2 What is biodiversity and how important is it?

1.2.1 The Concept of Biodiversity

1.2.1.1 What is Biodiversity?

Biodiversity encompasses all organisms, including plants, animals, micro-organisms and human beings (McNeely *et al*. 1990). Owing to human population growth and economic

pressure, there has been a high rate of biological resource destruction. Realising this global environmental concern, the United Nations Environment Programme (UNEP) established the Convention on Biological Diversity (CBD) in 1992.

The CBD defines biodiversity as: "*the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part*" (1992).

This marked a significant step in global efforts in the conservation and sustained utilisation of biological diversity. Within the scope of the CBD, sustainable utilisation of biological resources is an important component. A critical aspect of this is convincing people that it is necessary to conserve biological diversity for the well-being of humankind and for the use of future generations. Biodiversity is one case where the consequences of choices are unclear. An important decision-support mean which CBD identifies as providing considerable help in biodiversity planning and implementation is the environmental impact assessment (International Association for Impact Assessment 2005). The convention requires signatories to apply environmental assessment to proposals with possible impacts on biodiversity in order to help meet their objectives, so that development proposals respect mechanisms for the conservation of biodiversity, result in the sustainable use of biodiversity resources, and ensure fair and equitable sharing of benefits arising from the use of biodiversity (CBD 2002).

The CBD guidelines promote an "ecosystem approach" that requires participation in a long-term perspective based on a biodiversity-based study area and adaptive management to deal with the dynamic nature of ecosystems, uncertainty and the often unpredictable nature of ecosystem functions, behaviours and responses (IAIA 2005). Biodiversity concerns are not limited to protected areas. Elements of natural systems remain in even the most urbanised environments and play an often important role in the quality of life in those cities (IAIA 2005). CBD also mentions "the Precautionary Principle" (1992). This refers to any situation in which important biodiversity may be threatened and there is insufficient

knowledge to either quantify the risks or implement effective mitigation. The ecosystem approach (CBD 2000) must first try to understand the biology of an endangered species and the narrowly defined ecosystem of which it is a part. The approach then considers holistically the resource requirements and activities of humans, along with their reciprocal relationships with other organisms within their ecosystem.

According to Gill (2004), this approach has a number of advantages over the single-species approach. These advantages, as identified by International Union for Conservation of Nature (2007) include: recognising the interactions of species within larger biotic communities, therefore increasing the chances of survival for all member species; lessening the need to list additional species living in the same biological communities; saving money and endeavour expended in separate consultations over issues affecting each species; lessening the probability that some factor critical to recovery will be missed by too narrow a view; and decreasing disruption to economic activities that might result from the more extended single-species recovery efforts in an area with numerous threatened and endangered species (Gill 2004). However, the size of indicator species has been a contentious issue. Landres, Verner and Thomas (1988) suggest that large species make better indicators because they have a slower turnover, are more constant and their population changes are directly related to environmental changes. However, Caro and O'Doherty (1999) argue that indicators should be small species as they can respond faster to environmental change. Given that large and small species operate on different spatial and temporal scales, both should probably be included (McLaren, Thompson and Baker 1998). McLaren, Thompson and Baker (1998) also suggested that sets of indicators should include species representing all trophic levels.

Lambeck (1997) proposed a multispecies approach for defining the landscape attributes and management practices required to meet the conservation requirements of biota. This 'focal species approach' is one means of formulating solutions to habitat loss and fragmentation in agricultural landscapes. Lambeck argued that to prevent further loss of species from agricultural landscapes it is necessary to determine the composition, number and pattern of

habitats required to meet the needs of those species that are still present (Freudenberger and Brooker 2004). The presence or absence and abundance of a species are believed to be appropriately explained by studying the habitat requirements at local spatial or microhabitat scales. However, it is now accepted that the mechanisms explaining the patterns of habitat selection depend on the scale on which the study is made (Morris 1987). Particular factors can play a different role according to scale, and phenomena occurring at local scales are linked to factors operating at higher spatial and time scales. The use of a landscape perspective is particularly relevant since key factors acting on population dynamics at a fine scale can often be found (Rosenzweig 1991). Despite its obvious importance for studies of habitat selection applied to the conservation of species, this approach has rarely been used (Saab 1999; Sanchez-Zapata and Calvo1999). It is through this multispecies approach that that biodiversity conservation has identified some areas as, for example, biodiversity hotspots, biosphere reserves and wetland site.

The attempt to identify flora and fauna in similar ecosystems has been widely adopted in addition to putting them into relevant categories. One popular approach is biodiversity hotspot of Myers (1988). This approach has been applied throughout the world by ecologists and scientists and is presented in the following section.

1.2.1.2 Biodiversity Hotspots

The concept of biodiversity hotspots was developed by the British ecologist Norman Myers in 1988 and has since been refined considerably. Hotspots are areas with the "richest and most threatened reservoirs of plant and animal life on Earth" (Conservation International 2002) Conservation International (CI) puts this forward as a means of targeting strategies to stem species extinction. CI adopted Myers' hotspots as its institutional blueprint in 1989, and in 1996, the organisation made the decision to undertake a reassessment of the hotspots concept, including an examination of whether key areas had been overlooked. Three years later an extensive global review was undertaken, which introduced quantitative thresholds for the designation of biodiversity hotspots: To qualify as a hotspot, a region must meet two strict criteria: it must contain at least 1,500 species of vascular plants (> 0.5 per cent of the

world's total) as endemics, and it has to have lost at least 70 per cent of its original habitat (Myers 1988). In the 1999 analysis, published in the book *Hotspots: Earth's Biologically Richest and Most Endangered Terrestrial Ecoregions* (Mittermeier *et al*. 2000), and a year later in the scientific journal *Nature* (Myers *et al*. 2000), 25 biodiversity hotspots were identified. Collectively, these areas held as endemics no fewer than 44 per cent of the world's plants and 35 per cent of terrestrial vertebrates in an area that formerly covered only 11.8 per cent of the planet's land surface (www.biodiversityhotspot.org 2007). The habitat of this land area had been reduced by 87.8 per cent of its original extent, such that this wealth of biodiversity is now restricted to only 1.4 per cent of Earth's land surface. A second major reanalysis has now been undertaken and published in the book *Hotspots Revisited* (Mittermeier *et al*. 2005). In total, this updated analysis reveals the existence of 34 biodiversity hotspots, each holding at least 1,500 endemic plant species, and having lost at least 70 per cent of its original habitat extent. Overall, the 34 hotspots once covered 15.7 per cent of the Earth's land surface. In all, 86 per cent of the hotspots' habitat has already been destroyed, such that the intact remnants now cover only 2.3 per cent of the Earth's land surface (CI 2007). This review considers significant biodiversity hotspot in the study area, namely, the Indo-Burma hotspot.

Figure 1.1 World Map of Biodiversity Hotspots (Conservation International 2005)

1.2.1.3 Indo-Burma hotspot

The Indo-Burma hotspot encompasses 2,373,000 km² of tropical Asia east of the Ganges–Brahmaputra lowlands. Formerly including the Himalaya chain and the associated foothills in Nepal, Bhutan and India, the Indo-Burma hotspot has now been more narrowly redefined as the Indo-Chinese subregion (Xiang *et al*. 2003). The hotspot contains the Lower Mekong catchment. It begins in eastern Bangladesh and extends across north-eastern India, south of the Bramaputra River, to encompass nearly all of Myanmar, part of southern and western Yunnan Province in China, all of the Lao People's Democratic Republic, Cambodia and Vietnam, the vast majority of Thailand and a small part of the Peninsular of Malaysia. In addition, the hotspot covers the coastal lowlands of southern China (in southern Guangxi and Guangdong), as well as several offshore islands, such as Hainan Island (China) in the South China Sea and the Andaman Islands (India) in the Andaman Sea. The hotspot contains the Lower Mekong catchment where many species are found (Triet 2004). Krupnick and Kress (2003) suggest that one of the key indicators of the conservation importance of the Indo-Burma hotspot as part of the Indo-Pacific ecoregion is that the highest numbers of rainforest species are in this hotspot.

The transition to the Sundaland hotspot in the south occurs on the Thai–Malay Peninsula. The boundary between the two hotspots is represented by the Kangar–Pattani Line, which cuts across the Thailand–Malaysia border, though some analyses (Myers *et al*. 2000) indicated that the phytogeographical and zoogeographical transition between the Sundaland and Indo-Burma biotas may lie just to the north of the Isthmus of Kra, associated with a gradual change from wet seasonal evergreen dipterocarp rainforest to mixed moist deciduous forest. Much of Indo-Burma is characterised by distinct seasonal weather patterns (Hughes *et al*. 2003). During the northern winter months, dry, cool winds blow from the stable continental Asian high-pressure system, resulting in a dry period under clear skies across much of the south, centre and west of the hotspot (the dry, north-east monsoon). As the continental system weakens in spring, the wind direction reverses and air masses forming the south-west monsoon pick up moisture from the seas to the south-west and bring abundant rains as they rise over the hills and mountains (ASEAN Biodiversity Centre 2007).

The key issue is balancing the allocation of effort to conservation of species diversity with protection of population diversity and ecosystem services, particularly when the basics to be conserved are within coldspots (Kareiva and Marvier 2003). A wide diversity of ecosystems is represented in this hotspot, including mixed wet evergreen, dry evergreen, deciduous and montane forests. There are also patches of shrublands and woodlands on karst limestone outcrops and, in some coastal areas, scattered heath forests. In addition, a wide variety of distinctive localised vegetation formations occur in Indo-Burma, including lowland floodplain swamps, mangroves and seasonally covered grasslands (CI 2007).

Figure 1.2 Map of Indo-Burma Hotspot (www.biodiversityhotspots.org 2007)

Table 1.1 Description of Indo-Burma Hotspot
Source: Mittermeier *et al*. 2000
(Recorded extinctions since 1500. *Categories I–IV afford higher levels of protection.)

Content	Details
Hotspot Original Extent (km^2)	2,373,057
Hotspot Vegetation Remaining (km^2)	118,653
Endemic Plant Species	7,000
Endemic Threatened Birds	18
Endemic Threatened Mammals	25
Endemic Threatened Amphibians	35
Extinct Species	1
Human Population Density (people/km^2)	134
Area Protected (km^2)	235,758
Area Protected (km^2) in Categories I–IV*	132,283

1.3 Biodiversity Conservation

1.3.1 Historical Background

Biodiversity conservation is linked back in 1950 that people awareness had been raised through chemical insecticide protest. Rachel Carson (1959) wrote a book Silent Spring which raised awareness to people and this was a significant issue in early years of environmental conservation.

The 1968 Biosphere Conference was organised by United Nations Educational, Scientific and Cultural Organisation (UNESCO) to enhance the relationship between nature and human beings. It should be noted that this intergovernmental conference was not only the first among the United Nations, but this examination was the first conference to promote the conservation of nature (UNESCO 1968). It could be said that this conference established the early concept of sustainable development. This conference launched the significant UNESCO "Man and the Biosphere" (MAB) Programme two years later. One of the original MAB projects consisted in establishing a coordinated network of sites representing the main ecosystems throughout the world in order to protect their genetic resources. Moreover, research involving ecosystems and monitoring and training issues was promoted. The biosphere reserve was named after the MAB programme (UNESCO 1970).

1.3.1.1 Biosphere Reserve

The biosphere reserve concept can be used as a framework to guide and reinforce projects to enhance people's livelihoods and ensure environmental sustainability (UNESCO 2002). UNESCO recognition can serve to highlight and reward such individual efforts. Awareness among local people can be raised by the biosphere reserve title. Both local people and government authorities would pay more attention to environmental issues. This can help to find more funding from different sources.

UNESCO does not require any change in law or ownership because each biosphere reserve has its own system of governance to ensure that it meets its functions and objectives (UNESCO 2002). The management system of a biosphere reserve needs to be open, evolving and adaptive in order for the local community to better respond to external political, economic and social pressures, which would affect the ecological and cultural values of the area (Taylor 2009). Thus, it is necessary to set up an appropriate governance mechanism, for instance a committee or board, to plan and coordinate the activities of all the actors concerned, each with their own mandate and competence. Usually a biosphere reserve coordinator is named as the contact person for all matters relating to biosphere reserves.

Biosphere reserves are sites recognised under UNESCO's MAB as sites that innovate and demonstrate approaches to conservation and sustainable development. They are under national independent jurisdiction, yet share their experiences and ideas nationally, regionally and internationally within the World Network of Biosphere Reserves (WNBR). There are 507 sites worldwide in 102 countries (UNESCO 2007). In some ways, biosphere reserves serve as "living laboratories" for testing and demonstrating the integrated management of land, water and biodiversity. Collectively, biosphere reserves form the WNBR, within which exchanges of information, experience and personnel are facilitated.

Biosphere reserves are representative examples of natural habitats, and must meet a minimum set of criteria in order to be designated. The sites are places where nature conservation and sustainable development can be reconciled and integrated, and each site is intended to carry out three basic and complementary functions according to the UNESCO criteria (1970):

- a conservation function to preserve genetic resources, species, ecosystems and landscapes;

- a development function to foster sustainable economic and human development; and
- a logistic function to provide support for research, monitoring, education and information exchange related to issues of conservation and development.

The core area, the buffer zone and the transition area form the whole area of the biosphere reserve. Only the core area requires legal protection in order to correspond to an existing protected area, for example, a nature reserve or national park. This scheme is applied in many different aspects following order of geographical and social perspectives which are available within the scope of legal protection measures and local constraints. This flexibility can be used creatively and one of the strongest points of the biosphere reserve concept is the flexibility of the scheme itself because it could facilitate the integration of protected areas into the wider landscape (Taylor 2009).

Figure 1.3 Structure of Biosphere Reserve (Investment, Sustainability and Development Consultancy 2007)

The MAB programme has evolved considerably since the 1970s and there is now a greater emphasis on sustainable development, research, training and education, in addition to conservation. In March 1995, a strategy (known as the Seville Strategy) recommended action to be taken for the future development of biosphere reserves, including substantially revised criteria for the sites. Biosphere reserves are in both developed and developing

countries and provide for local people economically, socially and ecologically. This scheme is applied in many different ways in the real world to accommodate geographical conditions, sociocultural settings, available legal protection measures and local constraints. This flexibility can be used creatively and is one of the strongest points of the biosphere reserve concept, facilitating the integration of protected areas into the wider landscape.

The biosphere reserve concept can be used as a framework to guide and reinforce projects to enhance people's livelihoods and ensure environmental sustainability. UNESCO recognition can serve to highlight and reward such individual efforts. The designation of a site as a biosphere reserve can raise awareness among local people, citizens and government authorities on environmental and development issues. It can help to attract additional funding from different sources.

At the national level, biosphere reserve is served "learning places" to explore and apply approaches to nature conservation, providing lessons that can be adapted for other places. In addition, they are a concrete means for countries to implement Agenda 21, the CBD (for example, the ecosystem approach), many Millennium Development Goals (for example, on environmental sustainability) and the UN Decade of Education for Sustainable Development (UNEP 2007). In the case of large natural areas which overlap national boundaries, transboundary biosphere reserves can be established jointly by the countries concerned, testifying to long-term cooperative efforts. The cooperation of international organisations has been attempted to conserve nature. Accordingly, the major circumstances related to international cooperation related to the previous sections are presented below.

1.4 Research Rationale

The importance of biodiversity conservation has mentioned in the CBD (1992) and well-established in several literature reviews and research (e.g. Swiderska 1999; Vermeulen 2004). Although a number of scholars have addressed framework development of biodiversity conservation, no operational definition for biodiversity has been established

(Gillison and Liswanti 2004). Not only has interest and engagement in biodiversity policy increased (CBD 1992; Haddock *et al*. 2006; Taylor 2009; Santamaria and Mendez 2012), but the biodiversity policy has also been formulated through a number of pieces of legislation (ONEP 2008). Biodiversity policy, in fact, involves with stakeholders or actors that have influence in the policy process. This has implications for decision-making at national and local levels. Growing amounts of time and resources are being spent on this issue to create a proper documents for which provide the conservation of biodiversity (ONEP 2009). This might be because the expected benefits of biodiversity are extensive, in particular, an increase in public acceptance, interest and support with regard to decisions or implementation (Creighton 2005; Santamaria and Mendez 2012). However, there is an outstanding inconsistency between the amount of time, money and energy that the governments of many countries put into biodiversity policy in their public decision-making processes and the amount of their attention that is focused on evaluating the effectiveness of their efforts (CBD 2005). Besides, a number of people feel that biodiversity policy processes increase, rather than decrease, the time and cost of implementing the decision: at the same time, they also perceive that instead of decreasing conflicts among stakeholders, the biodiversity policy process escalates controversies (Taylor 2005). Hicken *et al*. (2004) address that much research on biodiversity focus on "global existences value" rather than "local existences value of biodiversity". Therefore, research on biodiversity should address more on local scale where interactions between human and nature are considered as major cause of biodiversity loss (Rauchmayer 2009).

As there is no systematic evaluation of biodiversity policy in Thailand (Wong *et al.* 2007) where a number of species have been extinct and endangered (IUCN 1999; MONRE 2007), although the policy has been implemented. The thesis evaluates biodiversity policy development and implementation process identifying central and regional level of Thai administrative system and bureaucracy reflecting the stakeholders in the policy process. Furthermore, the policy formulation will be analysed in order to identify the decision-making process whether involved stakeholders have been included in the process, ranging from national to local levels. All relevant aspects have been included in the research for

example, political, social, economic, environmental and cultural aspects so that the research is explicitly analysed as holistic approach for biodiversity policy.

To examine the implementation of the policy thoroughly, the Maesa-Kogma biosphere reserve in the North (Chiangmai province), the Sakaerat biosphere reserve in the Northeast (Nakhon Ratchasima province) and the Ranong biosphere reserve (Ranong province) have been investigated by comparing three different regions which differ in geographical, social and economic contexts. This research will analyse how effective biodiversity policy has been implemented regarding different management of various government agencies in each region. Moreover, the social and economic perspectives will be explored how these have been affected to the biodiversity policy in current situation. Additionally, the relationships of stakeholders involved with biodiversity policy will also be analysed so that the actors will be more understanding in terms of their interests and influences on biodiversity conservation.

Thailand is still learning how to implement effective biodiversity policy (ONEP 2008). The factors influencing the success and failure of the policy processes should be clearly investigated and identified to illustrate the real situation, and most importantly, to move forward in order to establish effective policy in resolving biodiversity degradation in Thai society. It is a significant challenge to recognise effective biodiversity management activities and to ensure that biodiversity policy has a contribution both from the public and the responsible authorities that plan and carry out biodiversity policy processes.

In order to comprehend whether a policy was effective after being fully implemented, there is a need to learn and evaluate the extent to which the policy was actually employed. This is because a lack of concern regarding implementation is a major obstacle to improving complex public policy (Patton 2002), in particular biodiversity policy processes (Hill *et al*. 2012). Although increasing emphasis is being placed on environmental policy, and biodiversity in particular, in many theoretical and empirical literatures (Mickwitz 2003; Gysen, Bruyninckx and Bachus 2006; Haddock *et al*. 2006; Crabbe and Leroy 2008;

Holmes and Clark 2008; Mermet, Bille and Leroy 2010), investigations and evaluations of the effectiveness of policy processes concerning biodiversity are small in number and problematic (Angelstam *et al*. 2003; Stoll-Kleemann 2010). Importantly, systematic evaluation of biodiversity in environmental policy is rare (Haddock *et al*. 2006). Only a few of these studies were based on predetermined criteria against which biodiversity policy should be evaluated (Vaessen and Todd 2008). In concrete situations, understanding what makes environmental policy, and particularly biodiversity policy, successful is difficult to determine and is challenging (Crabbe and Leroy 2008). This limitation makes improving biodiversity policy processes more difficult (Angelstam *et al*. 2003). Moreover, an example from the European Union, knowledge in biodiversity policy initiatives is required for the future as well, although it was found that the knowledge has been proactive only when the new perspective was just established (Santamaria and Mendez 2012). In the Thai context, while people have more opportunity to investigate and participate in the administration and decisions made by the authorities, the final decision regarding any policy still lies solely with government officers (Bureekul 2007).

Finally, it could be said that the question of how to be certain that the policy process is effective and results in any improvement or useful consequences seems to be the most critical (Mickwitz, 2003). Thus, a systematic evaluation of the processes of biodiversity policy is essential to ensure the continuing quality of the process and the implementation affected in the outcomes (Gysen, Bachus and Bruynincks 2002), to know how to effectively involve the public in the decision-making process in biodiversity policy development (Haddock *et al*. 2006; Crabbe and Leroy 2008), and, importantly, to increase understanding and develop knowledge of how to improve bringing policy into practice (Gysen, Bachus and Bruynincks 2002, Gysen, Bruyninckx and Bachus 2006; Angelstam *et al*. 2003).

1.5 Significance of the Study

This study is important in order to identify and examine aspects of effective implementation relating to biodiversity policy. An in-depth study of the development and implementation of Thai biodiversity policy was conducted. Both theoretical and practical aspects of biodiversity policy were thoroughly investigated and examined. The framework of this thesis established an evaluation of the biodiversity policy process, analysing perspectives of the decision-making process and its implementation in practice. This contributes to the field of biodiversity policy in Thailand for the reasons given below.

First, since Thailand signed the Convention on Biological Diversity (CBD) in 1992, the Thai government has put more effort into following international mainstream conservation. There have been a number relevant of laws and regulations enacted, as well as policy-level framework preparation by the government in order to provide ratification of the CBD. However, ratification of CBD was delayed due to a lack of coordination between the government authorities and on top of that, the political situation has not been stable. The other reason for this was because there were a number of redundancy centres for the CBD in Thailand although a national focal point has been established, but lack of efficient cooperation among government and other sectors organisations. Consequently, this study will be important for the implementation of future biodiversity policy in Thailand and address the actual gaps and constraints of biodiversity policy process in order for a better improvement of biodiversity policy as well as in the Southeast Asia region and other countries.

Second, the vast numbers of international studies state that policy evaluation is to examine and improve policy implementation. Because biodiversity is concerned with the public good, holistic aspects should be taken into account in order that effective implementation is assured. There are very few studies in Thailand evaluating the effectiveness of biodiversity policy; this is the first in-depth investigation of Thai biodiversity policy development and implementation associated with complementarily hierarchical national, regional and local

biodiversity-related administration and bureaucracy. Thus, this study is worth conducting because it forms a significant step in understanding the specific implementation of biodiversity policy in the Thai context.

Third, there have been a number of studies on biodiversity conservation in Thailand, however, the holistic nature of biodiversity policy development and implementation in Thailand is under-researched. Furthermore, a systematic study of biodiversity policy evaluation is yet to be conducted. Therefore, it is essential to evaluate the biodiversity policy to present the actual situation on how this affects biodiversity protection. This study is more important to Thailand because the research findings of a systematic evaluation of the decision-making process, implementation and obstacles of biodiversity policy contribute recommendations to improve future practice.

Finally, the thesis also develops a process-orientated policy evaluation perspective and combines an outcome-orientated policy evaluation to create a holistic approach for biodiversity policy evaluation in order to examine and evaluate the whole process of biodiversity policy and emphasises more understanding what is behind a policy instrument. This includes policy design, delivery and community/habitat and local level impacts. Moreover, the research develops an original set of criteria to evaluate Thai biodiversity policy in order to verify whether biodiversity has been protected in terms of biodiversity policy implementation in different administrative levels. The research also produces a recommendation for biodiversity policy as an example of a developing country which may be useful for other countries to adopt this as their guidelines to bring sustainable biodiversity policy conservation globally.

1.6 Research Aim and Objectives

There has been very little work undertaken in Thailand evaluating the effectiveness of biodiversity policy (Wong *et al*. 2007). This study aims to address this gap by highlighting key political strategies to date of the roles of central, regional and local government

working on biodiversity policy in Thailand, and will form the basis for a set of recommendations for improving biodiversity policy.

The overall aim of this research is to critically evaluate how biodiversity has been protected in terms of the effective implementation of biodiversity policy and management in Thailand. To achieve the research aim, the following specific objectives are identified below:

1. To examine and evaluate how biodiversity management and policy have been maintained.

2. To investigate the characteristics of the decision-making processes involved in policy development in Thailand.

3. To identify specific political and logistical constraints to the effective development and implementation of biodiversity policy, focusing on priority species and habitats.

4. To develop recommendations for holistically addressing current challenges to biodiversity conservation policy in Thailand.

As the aim of this research is to evaluate the implementation of biodiversity policy and management, the approach in this study is inductive. Following the nature of the study, this research is a qualitative methodology which is rational with the selected philosophy, approaches and methods. Instead of adopting a deductive approach, the use of existing theories based on the literature review has been investigated in order to identify the main objectives and issues involved in biodiversity policy development and implementation in Thailand. This will be presented in Chapter 4 Research Methodology.

A combination of both primary and secondary data has been used in this research. Documentary secondary data was used to complement primary data. Written documents such as administrative and public reports, books, websites, conference papers, journals, magazines and newspaper articles were used. Methods of primary data collection have been adopted including face-to-face interviews with government officers and local administrators, and local people who have been involved in the Thai biodiversity policy implementation.

1.7 Research Questions

This thesis evaluates the biodiversity policy development and implementation process by using the criteria developed for the study as well as addressing the obstacles prior to making recommendations to improve the biodiversity policy in Thailand. The hierarchical level of Thai administration and bureaucracy related with biodiversity, ranging from national, regional and local, have been investigated to identify the relevant aspects. The research questions of this study are:

1. What is the process of biodiversity policy development in Thailand and how are the bureaucratic and administrative systems reflected in the process?
2. How effective is the implementation of biodiversity policy concerning biodiversity conservation in the Thai context?
3. What are the obstacles to achieving effective implementation of biodiversity policy in Thailand?
4. How can biodiversity policy development and implementation in Thailand be more effective?

The research questions aims to answer any relevant issues which affect biodiversity policy in Thailand and also reflect extensive influences on Thai biodiversity policy formulation and implementation.

1.8 Outline of the Thesis

This section provides an outline of the contents of each chapter as follows:
Chapter 2 provides a detailed review of existing theories. The literature review examines the biodiversity policy development and implementation, policy analysis, stakeholder engagement, policy evaluation and the conceptual framework for evaluation as well as criteria established for the study for the evaluation framework. The policy analysis also addresses in this chapter in order to analyse the policy process and its involved perspectives. Stakeholder analysis is also provided since stakeholders influence in the policy process.

Chapter 3 provides the context of Thai biodiversity policy, its administrative system, constitutions and local level government to help justify context of Thai political, economic, socio-cultural and environmental perspective.

Chapter 4 outlines the research methodology adopted for this research. It begins by evaluating the strengths and limitations of different research approaches to justify the choice of the present research approaches (interviews and case study). It also defines the data collection methods used (primary and secondary), their sources, strengths and drawbacks, and the scope of this study in terms of validity and reliability, as well as ethical issues.

Chapter 5 provides the results from the actual situation of policy development and implementation processes in Thailand from central government and the three selected culturally diverse geographic locations. In addition, it details various government policies towards biodiversity and implementation processes at a local level. The roles and relationships of stakeholder are also presented in this chapter as well as views and opinions from actors related to biodiversity policy.

Chapter 6 presents an evaluation of the biodiversity policy process along with a set of criteria which have been developed in Chapter 2, process-orientated and outcome-orientated evaluation. The different experiences in biodiversity management and how well the policy has been implemented in Thailand are also discussed. Actor-linkage matrix is demonstrated to discuss how the actors relate in Thai biodiversity policy. This chapter also presents the justification how effective biodiversity policy in Thailand according to the two types of the policy evaluation, mix approach process-orientated and outcome-orientated evaluation. It also presents a discussion on the research.

Chapter 7 is the conclusion and recommendations based on the findings. It provides a conclusion based on the established questions about the process-orientated and outcome-orientated evaluation to Thai biodiversity, with a discussion of the limitations of the research and suggests topics for further research. The research implications and recommendations are also presented for improvement for future research.

1.9 Summary

Thailand has long been faced with numerous serious environmental problems (Jarusombat 2002), especially in terms of natural resource degradation and biodiversity issues (Bureekul 2000). An endorsement of development strategies based on growth through economics and industry without balancing social and environment factors is an important cause of environmental problems in Thailand (Thabchumpon 2002; TEI 2005). Accordingly, policy development and decisions about biodiversity-related issues which may affect local people, their way of life and the environment are widespread and growing (Beierle 2001). The importance of biodiversity issues and the rights of Thai citizens as related to biodiversity policy in sustainably preserving and utilising their environment and resources are recognised and emphasised in a number of Thai laws and regulations. Although the whole process of policy development and implementation in biodiversity protection seems to be promised and is manifested strongly in the Thai constitution, there remain many barriers to implementing these rights in practice (ONEP 2009).

Accordingly, an improvement in the biodiversity policy process is an important challenge. Not only should biodiversity policy formulation processes be conducted constantly in environmental policy, but evaluation of these processes of implementation should be carried out so that continual improvement is achieved (Crabbe and Leroy 2008). Thus, this thesis aims to investigate how to evaluate the effectiveness of biodiversity policy processes in the Thai context. The research findings will be used as a guideline to improve biodiversity policy processes to make them more effective in the future.

Chapter 2 Biodiversity Policy development and implementation: a theoretical review

2.1 Introduction

This chapter aims to examine the concepts of biodiversity conservation underpinning the literature on biodiversity management and then to establish a conceptual framework for this study. This review is confined to an overview of the theoretical and practical literature underlying the approach of involving and representing the public in biodiversity management for implementation of biodiversity policy. This chapter includes two major issues: the biodiversity conservation and economic development, and biodiversity policy evaluation. In the first part, the focus is the area of biodiversity from different viewpoints and problems in biodiversity conservation. General definitions of biodiversity policy approaches are presented and discussed, including decision-making processes in biodiversity policy formulation. The second part focuses on implementation of the policy, policy analysis and stakeholder engagement. It also demonstrates the conceptual framework, analytical evaluation framework and the criteria for policy evaluation.

Undoubtedly, biodiversity policy is a complex issue with different interpretations generating a large body of literature. The literature on what biodiversity means, the characteristics of biodiversity conservation policy, the benefits and contributions of biodiversity policy, and the barriers to effective biodiversity policy is considered in order to identify appropriate approaches to biodiversity policy decision-making and implementation processes. In particular, this chapter explores the nature of biodiversity policy as a means of managing biodiversity conservation with stakeholder engagement, and policy evaluation framework and criteria adopted from different sources of literature review.

2.2 Different standpoint: Biodiversity conservation VS Economic development

While there have been several attempts at the conservation of biodiversity, the failure of conservation has been apparently recognised (Swiderska 2002a; Vermeulen 2004; Taylor 2009; CBD 2011). An effective way to help engage the success of biodiversity conservation is the process of biodiversity policy. The mainstreaming biodiversity has been promoted from global to national level, as a cooperation of the CBD signatories complying with NBSAP (Swiderska 2002a).

Mainstreaming biodiversity in the CBD also links to Agenda 21, and has been noted as the heart of sustainable development to integrate environmental, social and economic objectives into the whole. However, the trend for biodiversity mainstreaming means that the countries of the North lead the way with a development model that serves their cycle of growth and enables them to exploit the advantages of biodiversity comparing with the South (Swanson 1997, cited in: Koziell and Saunders 2001). The North, for instance, the United States of America (USA) has signed the CBD in 1993, however, it has not yet been ratified (CBD 2013). The USA is one of the most industrialised countries in the world, where several projects about biodiversity have been taken into account but neglected the critics of other CBD parties to be a signatory of CBD.

While the CBD remarks that "economic and social development and poverty eradication are the first and overriding priorities of developing countries", a lack of understanding of the contribution of biodiversity to social and economic objectives occurs because there of a lack of win–win options for both biodiversity and development. Moreover, short-term economic interests become more acceptable than long-term ones among policy makers and planners due to rare access to information on the values of biodiversity (Swiderska 2002a).

In fact, policy makers and planners pay less attention to long-term interests and sometimes overlook local residents (Vermeulen 2002). Communities have been ignored or less involved in decision-making because mainstreaming biodiversity focuses on the national

level and looks towards global level biodiversity conservation as often seen on NBSAPs. NBSAPs lack integration with other sectors with great influence over nation's mechanism such as institutions and economics departments. Indeed, NBSAPs' priorities are lower than economic and social ones because several governments emphasise implementation of the CBD rather than setting up processes for civil society and local people (Roe 2010; Crouch and Smith 2011; McShane *et al*. 2011). Therefore, it is evident that economic and social issues have been explicitly concerned as high priorities since those links directly to human well-being rather than conservation.

There are a number of different NBSAP examples successes and failures in biodiversity policy. Jamaica's NBSAP has been integrated into planning systems (Swiderska 2002a:10). Moreover, Guyana developed their NBSAP creation process through participation and, after its completion, there were also actions arousing after two-year of the implementation. In another example from Asia, it was found that the NBSAP of India initially faced problems of integration at a local level and took longer than scheduled, however, it managed to succeed through the contributions of NGOs (Anuradha, Taneja and Kothari 2001). Similarly, Vietnam's NBSAP has been integrated into national policies, plans and programmes towards economic, social and biodiversity by exploiting technology in this context (Vietnam Environment Administration 2008).

While Jamaica, Guyana, India and Vietnam have been successful in NBSAPs processes, several unsuccessful NBSAPs are found during the process of biodiversity formulation, for example, Pakistan faced considerable problems of integration into economic, social and environmental contexts because of a lack of leadership and ownership at the policy and plan levels (Swiderska 2002a: 19).

Likewise, in a case from Africa, Ghana's NBSAP was terminated because there was a change of government and the new administration found that it was weakly managed (Swiderska 2004: 33). Furthermore, in Tanzania, a number of constraints to integration of the NBSAP were found, although biodiversity objectives had been integrated into the

policies and plans of national and local development processes (Swiderska 2004: 50). Swiderska (2002) noted that interdepartmental committees, for example, the National Councils for Sustainable Development, engage with different sectors and have meetings only when particular projects have been funded; some long-established committees have not met at all (Swiderska 2002b).

2.3 Biodiversity Policy formulation and implementation

2.3.1 What is Biodiversity Policy?

Policies are a set of forces within the control of the actors in the policy domain that affect the structure and performance of the system. The process of developing public policy is an activity that generally involves research, analysis, consultation and synthesis of information to produce recommendations. It should involve the evaluation of options against a set of criteria used to assess each option. An effective policy process is one that is generally characterised by five attributes, namely: issue identification, issue analysis, generating solutions, consultation and performance monitoring (Office of the Auditor General *Manitoba* 2007) and includes attributes that form part of the model of effective policy development.

Nevertheless, in order to solve the problem of biodiversity loss, biodiversity policy was established under the general topic of environmental policy. Biodiversity has its own features related to public policy that biodiversity is public utilisation, but has its own specific features that all stakeholder will be taken into account (Gysen *et al*. 2002; Crabbe and Leroy 2008). Therefore, this is important in biodiversity conservation and is presented below.

Generally, environmental policy contains several sections of environmental issues. Environmental policy analysis will be informed by many of the natural sciences, but is not limited to the natural scientists who will be able to analyse the policies (Pal 2009).

Biodiversity is one aspect of environmental policy that has own perspectives in order to deal with stakeholder engagement. Biodiversity requires analysis at various levels and on various scales since it engages with several dimensions, it is a so-called "umbrella concept" that has diversity on its own since biodiversity engages with several perspectives (Peuhkuri and Jokinen 1998). Biodiversity policy includes aspects of institutional, political and socio-economical perspectives in order to solve biodiversity issues which relate to stakeholders in many sectors.

2.3.2 Decision-making Process in Biodiversity Policy Development

The decision-making process in biodiversity policy is perceived as an important tool in biodiversity management (Ellis and Waterton 2004). Most biodiversity lies within developing countries, is often threatened because of political endemism, and the reserves that may have already been established in biodiversity hotspots are frequently are paper parks (Frazee *et al*. 2003) or subject to local population pressures. It is noted that the natural environment in Asia has continued to be severely degraded despite the implementation of environmental policy (Briffett *et al*. 2002). Environmental policy in developing countries has been faced with a number of political, economic and social problems. Cultural differences and the method of implementation are both important to engage any particular characteristics into policy process. As Thailand is one of the developing countries influenced by mainstreaming biodiversity, Thailand follows CBD to prepare the biodiversity policy after becoming signatory and its ratification afterward. It may be a lack of engagement of socio-cultural perspective when formulating a policy.

2.3.2.1 Biodiversity policy and National Biodiversity Strategic and Action Plan

In discussing how to implement their objectives at the national level, the CBD states in Article 6 that the Parties shall:

a) develop national strategies, plans or programmes for the conservation and sustainable use of biological diversity; and

b) integrate the conservation and sustainable use of biodiversity into relevant sectoral or cross-sectoral plans, programmes and policies.

Biodiversity policy requires formation of the nation's National Biodiversity Strategic and Action Plan (NBSAP) and implementation where the parties have ratified the CBD. Biodiversity policy processes involve stakeholders during NBSAP formation and implementation. Engaging stakeholders and institutions in the processes of NBSAP formation relies on policy makers to define the objectives and targets, and on what scale the policy will be delivered. Stakeholders are important to the success or failure of a project (CBD 2008). The next section is going to present stakeholder in biodiversity policy.

2.4 Stakeholder Engagement in Biodiversity Policy

In biodiversity policy, stakeholders involve in policy making as they have stake in the policy. "Stakeholders" is defined as any group or individual who can affect or is affected by the decisions or activities used to achieve the organisation's objectives (Freeman 1984; Smith 1997; Philips 2003). Likewise, English *et al.* (1993) identified that a stakeholder can be defined as a person, group or business that has a share or interest in a particular activity or set of activities. Moreover, stakeholder is defined as who has particular interest that include government, NGOs and individual (Petts and Leach 2000).

Regarding biodiversity, stakeholders can be both individual and collective actors such as social movements or local networks, and can incorporate actors such as unions, chambers of commerce or organisations that are composite groups of people who have a high degree of autonomy in identifying their purposes (CBD 2008). More often, collective actors are represented by individuals linked to the collective actors (Coenen 2008). The rationale for stakeholder involvement in biodiversity is that there is a complexity in decision-making systems that cannot be dealt with solely by any set of experts. Agreement is only possible through stakeholder channel of communication and negotiation. Therefore, the stakeholder characteristic is crucial, although communicating information to a broad stakeholder can be

difficult due to the dynamics of the system, differences in the technical expertise of the audience, and potentially conflicting perspectives among stakeholders. Furthermore, in many social and economic systems, decisions typically involve complex scientific and technical issues and a wide range of stakeholders, scientific uncertainty, value conflicts, ecosystem dynamics and social dynamics, so that environmental decisions are essentially prone to challenge (Mostashari 2005).

Yosie and Herbst (1998) state that passing on the relevant information to the decision makers in the policy process becomes challenge since all stakeholders' opinions should be included. Although some people choose not to declare their interests, they still have a right to know if their interests may be affected (Petts and Leach 2000). The biodiversity problem is dealt with by government authorities in order to solve the problem of the public and stakeholders. Therefore, the government should engage all related aspects to biodiversity in order to ensure the stakeholders' views in the policy making and will response to the agenda setting prior to decision-making process.

There are two groups of stakeholders, as mentioned in CBD (2008):

a) External stakeholder can be ministries, government organisations, private sectors, landholders, local governments, women's groups and community associations. This group can be identified in three different types below

- Primary stakeholders: those needed for approval or financial support and who are directly affected by the policy;
- Secondary stakeholders: those who are indirectly affected by the policy;
- Tertiary stakeholders: those who are not directly affected but can influence opinions.

b) Internal stakeholders are called the forgotten stakeholders since it has been more usual to concentrate on external stakeholders. Examples of internal stakeholders are: the direct superiors of the CBD focal point and the NBSAP coordinator; planning staff in one's own ministry who allocate funds and staff; and colleagues in one's own ministry responsible for other conventions, for instance The Ramsar Convention on the Wetland,

United Nations Framework Convention on Climate Change (UNFCCC), The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), or CBD related issues.

Regarding stakeholder engagement, there are a number of examples of policy that engaging stakeholders at a national level to facilitate local and indigenous communities as well as local government in which the governance system has been implemented. In India, the smallest unit of decentralisation is the village assembly where local and tribal institutions have been recognised (Anuradha, Taneja and Kothari 2001). In Ireland, stakeholder engagement has been involved in invasive species policy that promotes to bridge the gap between biodiversity conservation and trade at national, European and global level (Stokes *et al*. 2006). The importance of stakeholder engagement in invasive species management: a cross-jurisdictional perspective in Ireland)

With regard to biodiversity policy, the process of policy development usually involves stakeholder analysis in order to identify the characteristics of key stakeholders, to understand stakeholders' relationships with and their interests in the policy and to evaluate power relationships within stakeholders' network. To analyse stakeholders engagement in policy, actor linkage matrix is commonly used so that relationship of actors can be demonstrated in actor-linkage matrix. The matrix presents two-way relationship between actors whether there are relationship between the actors or not. The actor-linkage matrix will be discussed in chapter 6.

2.5 Implementation of Biodiversity Policy

2.5.1 Process of Implementation

Implementation is "a set of processes after the programming phase that are aimed at the concrete realization of the objectives of a public policy" (Knoepel 2007: 188). Glachant (2001: 15) defined the policy implementation stages as following: transposition which

consists of any legislative, administrative and regulatory measure; practical application which is competent authorities in local level and appropriate decisions to meet their legal obligations; enforcement with regards of measures in order to encourage others to comply with legislation.

Implementation of biodiversity policy is upon the government as an authority to enforce the policy according to the laws and regulations. Policy implementation is seen as a tension generating force in society. Tensions are generated between and within four components of the implementing process: idealized policy, implementing organisation, target group, and environmental factors (Smith 1973).

2.5.1.1 Problems/Barriers of Implementation

The factors affecting policy implementation are primarily institutional and cultural (Sutton 1999). On the one hand, institutional factors may or may not fit with the national regulatory and institutional traditions (Boerzel 2000). On the other hand, cultural factors could delay implementation (Pridham 1996) and with relation to the compliance culture (Toshkov 2007). It may be because culture influences on people's attitudes and opinions towards institutions and people response to policy differently.

In accordance with biodiversity policy, the set of dimension is an efficient tool for the implementation of biodiversity policies (Angelstam *et al*. 2003). The social and political systems can be considered hierarchical both structurally and functionally (Berkes *et al*. 2003). In addition, the socio-economic context should be taken into account in order to understand the overall cultural structure, which might help in the effective implementation of biodiversity policy.

Table 2.1 Comparison of Examples of Biodiversity Policy Implementation in Developed and Developing Countries

Category	Country	CBD signed year	CBD ratified year	National Biodiversity Strategies and Action Plan	Local Action Plan
Developed countries	UK	1992	1994	1993	Yes
	Netherlands	1992	1994	1994	Yes
	Denmark	1992	1993	1993	Yes
Developing countries	Vietnam	1992	1994	1994	Yes
	India	1992	1994	1994	Yes
	Thailand	1992	2004	1998	No

Biodiversity policy implementation varies from area to area. In the case of developed countries, for instance the UK, the first biodiversity action plan was implemented at the national level in 1994 and there are biodiversity organisations at the local level throughout the country (www.ukbap.org.uk, 2009). This is an example of good biodiversity policy implementation at all levels, as mentioned in the CBD.

By contrast, the CBD Working Group on Review of Implementation (CBD Secretariat 2007) found inadequate mainstreaming of biodiversity in sectoral planning, national development and poverty reduction strategies. For example, in South Africa, Wynberg (2002) pointed out that biodiversity levels declined in the decade after the Rio Convention, despite considerable expansion of protected areas. Likewise, Zisenis (2008) states that established European and international biodiversity-related regulations do not sufficiently consider different biodiversity values or relate them to the complete criteria of implementation, but rather they still follow the traditional nature conservation approach which has failed to halt the loss of biodiversity. Another example from developing countries presents in Bonheur and Lane (2002) and they point out that even the Cambodian government is beginning to promote integrated natural resource management, but this

operates under serious constraints due to economic and political weakness, deeper cultural traditions and the country's difficult recent history. Therefore, it should be noted that despite attempt to protect biodiversity throughout signatory countries, biodiversity is still being destroyed and cultural differences should be concerned accordingly in order to reach sustainable biodiversity conservation.

There are a number of barriers to policy implementation which are structured barrier and legislative barrier. These can be explained as follows.

2.5.1.2 Structured Barriers

Despite the existence of good environmental policy guidelines and legislation, biodiversity degradation continues to be a major concern in developing countries. In many cases, environmental assessment has also been ineffective due to a lack of legislation, organisational capacity, training, environmental information, participation, diffusion of experience, donor policy and political will. Environmental Impact Assessments have not been able to give environmental sustainability assurance (ESA) for these countries (Sadler 1999). For example, Padgett and Kriwoken (2001) state that the truth about EIA in environmental policy in Australia is that any weaknesses in legislation, and a bias towards development over sustainability have resulted in policy situation.

In addition, despite significant attempts by the International Association for Impact Assessment and Institution of Environmental Assessment in the UK to create guidelines for best practice (1999) there is no guarantee that they will be followed. Furthermore, De Bruijn and Ten Heuvelhof (2002), in a case study from the Netherlands, stated that the government abandoned plant conservation at the beginning of their environmental policy implementation. However, after rounds negotiations with stakeholders, the conclusion was that whether or not the stakeholders will accept this, they are committed to it and the particular research would be conducted among government and the stakeholders using a large number of decisions, data and interim reports operating within the choices they may have included.

India is one of the developing countries in which biodiversity management is dominated by the concept of ecological equilibrium, meaning the minimisation of all disturbance, and the biodiversity evaluation in protected areas is not comprehensive or conducted regularly (Vermeulen and Koziell 2002). Furthermore, Indian biodiversity units do not count mainstreaming biodiversity as part of their role, whereas economics and trade are considered as being primary concerns (Swiderska 2002a).

Furthermore, some countries in Asia, for example India, give lower priority to environmental evaluation, at least at the policy level, compared with economic growth and development, poverty alleviation, and, sometimes, political stability. But in such countries, for example in Sri Lanka and Bangladesh, the World Bank, Asian Development Bank (ADB) and other international agencies are partly forcing governments to address environmental issues as part of their lending and grant-issuing conditions (Briffett *et al*. 2002; Momtaz 2002; McShane *et al*. 2011). Therefore, it can be demonstrated that economic growth has been vastly considered as high priority in several government particularly in developing countries.

2.5.1.3 Legislative Barriers

Ambiguity in legislation and guidelines leading to unclear wording and procedures in the relevant legislation and guidelines of how to manage and encourage environmental policy is criticised as a barrier to authorities and stakeholders explaining the policy process to the public in many countries (Blahna and Yonts-Shepard 1989; Vari 2004). Similarly, Gysen *et al*. (2006) express views that legal frameworks which are inconsistent and overlap often confuse stakeholders and lead to difficulties with interpretation and practice. Besides, Toogood *et al*. (2004) note that in European biodiversity policies, major factors influencing farmer participation are structure, transparency and user friendliness.

2.5.2 Effective Biodiversity Policy Implementation

Baird and Dearden (2004) suggest that a mix of private ownership, common property management and central government association may be required to maximise benefits to local people and ensure long-term protection of biodiversity. Most biodiversity lies within developing countries, often threatened because of the political system, and what reserves might have already been established in hotspots are frequently paper parks (Frazee *et al*. 2003) or subject to local population pressures. In the developing and transitional countries of Asia, EIA has been widely practiced as a planning tool that identifies potential impacts associated with development and determines their level of significance and the need for mitigation measures in policy development.

Despite its extensive use in many Asian countries, certain limitations are now being increasingly recognised with regard to the achievement of sustainable development within the planning process. It is also noted that the natural environment in Asia has continued to be severely degraded despite the implementation of environmental policy (Briffett *et al*. 2002). Biodiversity policy in developing countries has been faced with a number of political, economic and social problems. For example, the budget allocation is dependent on the economic situation of its country.

2.5.2.1 Biodiversity Policy Implementation associated with sociocultural aspect

Cultural difference and way to implementation are both important aspects that vary by country. Culture reflects people's behaviours and how they utilise biodiversity. Several examples from different cultures indicate linkages between biodiversity policy and other fields. In South America, for example, Maya culture supported multiple uses for natural forest to provide food, medicine and other resources over more than 3,000 years of intensive management (Ross 2008). It can be implied that biodiversity supports human being for a very long time and that can still be utilised until current period.

Similarly, there are a number of debates in within the field of ecology that present different views from several aspects. Ecology has different attitudes and views towards biodiversity, some of which concern the utilisation of biodiversity. Some perspectives are closer to regarding nature as having a spiritual aspect. Deep ecology views that everything in the ecosystem and called ecological egalitarianism. Arne Naess (1995) pointed out that deep ecology is a philosophy of ecology (ecosophy). The paradigm holds that biodiversity has intrinsic value, and all questions are asked and answered by way of 'deep' value and society. Arne Naess's view of deep ecology is 'simple in means, rich in ends' so that there will more diversity within the ecosystem and more attention paid to nature and psychological relationship between human and nature as a whole, rather than to material or human concerns (Bovina 1995). Deep ecology reflects the intrinsic value or inherent worth that the diversity of life and fertility provide, making this a holistic approach to the whole atmosphere. It is, indeed, compatible with biodiversity that human utilise from nature and maintain their livelihoods as balancing holistic system. Thus, biodiversity can be implied as holistic approach of nature management.

Besides, another ecosophy or ecopsychology that relates to biodiversity is Buddhism. Buddhism is a religion with links to nature and spiritual aspects (Swearer 1997). Most Buddhist countries are in South East Asia, for example, Thailand, Cambodia, the Lao People's Democratic Republic and Burma which are in Southeast Asia. In addition, there are some followers of Buddhism in Tibet and Japan as well. However, in Tibet and Japan mainly followed Mahayana Buddhism which concerned more about reincarnation that different from Theravada Buddhism in Southeast Asia. Nonetheless, Buddhism's main philosophy is that everything is based on nature and Buddhism is also an ecocentric religion which follows the cycle of nature in teaching the basics of life and about uncertainty (Revel and Ricard 2000).

Likewise, Sponsel and Natadecha-Sponsel (1997) noted that Buddhism encourages biodiversity conservation in both theory and practice as an ecocentric, peaceful and mind-based development, whereas Western religions are in favour of development, consumerism,

technology, violence and an anthropocentric point of view (Sessions, 1995); as their beliefs hold that humans control nature, this would end in biopoverty (Sponsel and Natadecha-Sponsel, 1997). Buddhism is rooted in and influences culture and behaviour. This explains how people who follow Buddhism express their opinions in terms of biodiversity conservation since followers of Buddhism perceive a relationship between themselves and nature (Kaewpon 1999). It can be implied how different characteristics of conservation in different countries and societies that influence from culture and religion. A diagram of the differences between Buddhism and Western worldviews is presented below (Figure 2.1).

Buddhist Worldview

Figure 2.1 Differences Between Buddhism and the Western Worldview
(Source: Sponsel and Natadecha-Sponsel 1997: 47)

Thailand is one of the developing countries that has faced problems with its biodiversity policy related to the international concept of biodiversity. It also faces a problem of implementation to the local level although government has attempts to associate with them. The next chapter (Chapter 3) is presented in order to understand the basic circumstances

and local aspects in Thailand that affect biodiversity management in general, and biodiversity policy in particular.

2.6 Biodiversity policy analysis

2.6.1 Policy Analysis

In general, policy analysis can be defined as "determining which of various alternative policies will most achieve a given set of goals in light of the relations between the policies and the goals" (Nagel 1999). It is a process in which information will be generated on the consequences and uses of various tools involved in the policy-making process to help make a decision (Walker 2000). Similarly, Dunn (2008) defined policy analysis as "a process of multidisciplinary inquiry, designed to create, critically assess, and communicate information that is useful in understanding and improving policies". In addition, policy analysis can similarly be defined as "the disciplined application of intellect to public problems" (Pal 2009: 15). Besides, Bardach (1996: 1) also points out that policy analysis "draws on intuition as much as method". Analysis of government policies consists of uncertainties and is a process that has no exact form (Najam 2005). Although a policy cycle can illustrate stages of the policy process, the extent, criteria and level of problems have been rather difficult to predict (Weimer and Vining 1998; Sabatier 1999). In addition, Walker (2000) points out that "without analysis, important policies choices are based on hunches and guesses or sometimes with regrettable results". Thus, policy analysis is significant so that the policy will be understood clearly and systematically to improve the future policy development.

Policy analysis can be divided into two major fields. The first is analytical and descriptive, i.e. it attempts to explain policy and its development. The second is prescriptive, i.e. it is involved with formulating policies and proposals. Freudenberger and Brooker (2004) pointed out that policy-makers are seeking solutions from conservation biologists, not just a better understanding of the fragmentation process and its impact, and only through

implementation and long-term monitoring. What type of analysis is conducted depends on the area of interest and the purpose of the analysis.

The policy cycle demonstrates policy-making process and forms a circle back to the beginning, and policy analysis involves logical performance steps (Walker *et al*. 1979; Berry and Berry 1992; Patton and Sawicki 1993; Sabatier 2007; Birkland 2010). First, agenda settings are used in the early stage to identify problems. Policy analysts take into account a wide range of relevant factors that exist. The magnitude and extent of problems are involved with scale and the impact of existing economic and political policies. Stakeholders will then be taken into account and policy analysts will determine options and criteria for the next step. Decision-making will involve stakeholders and the participation of local and indigenous people at a national level may be integrated into the decision-making process, depending on the type of policy. Moreover, alternative policies will also be considered. After the decision has been made, policy formulation will be processed by the relevant department. Policy makers concern about all risks, benefits and drawbacks involved with the elements of policy. Policy will then be implemented after approvement from the authority. Evaluation takes place at every stage in order to ensure that any limitation or constraint is resolved. Moreover, evaluation can point out whether a problem has been solved, discover new potential problems (Patton and Sawicki 1993), see whether the policy could be improved and refer to the success and failure of policy implementation. A diagram of the policy cycle is presented below (Figure 2.2)

Figure 2.2 Policy Cycle with Outputs and Outcomes (Source: FAO 2000)

2.6.1.1 Approaches to policy analysis

There are a number of approaches to policy analysis. In general, there are three approaches to policy analysis. The first is an analytical approach, focusing on a micro-scale of analysis to gain the best alternatives for the effective and efficient implementation of policy. The second is the policy process, which considers the political context and stakeholders involved in the policy process. This focuses on stakeholder power relationships, the characteristics of stakeholders, actors and political power, for example. Its scope is middle scale, including public participation and alternatives for better solutions. The last approach is the meta-policy approach, focusing on the macro-scale. It involves political, social, economic and cultural factors influencing the policy process and its implementation.

2.6.2 Models for policy analysis

In order to analyse policy, a framework of policy analysis will be applied to learn about and understand policy perspectives and process (Walker 2000). Polski and Ostrom (1999: 3) note that "policy analysis must include a careful survey of how participants actually do things and why they do them one way rather than another". It will also help to focus on priority problems related to public policy or important characteristics of the public policy. As policy can vary between and also within countries, as well according to the political, social, economic and cultural context, policy analysis is a systematic way to understand and identify factual situations leading to each policy (Hardee *et al*. 2004). Primmer (2011) notes that to understand the policy process it is necessary to analyse how policy has been formulated and the way in which it has been designed. Furthermore, this analysis will identify the process of policy-making so that consequences can be predicted for the next policy, and some have focused on the institutional analysis and development framework (IAD) (Sabatier 1999; Ostrom 2005, 2007; Sabatier 2007). However, there are some gaps between the theory and the policy-making process that need a better understanding of

policy analysis (Peterson 1995). There are a number of related models using policy analysis (Pollock *et al*. 1994; Sabatier 1999; Ostrom 2005) and this will be explained below.

2.6.2.1 Institutionalism: policy as institutional output

An institutional model has been adopted in several policy analyses as it consists of actors' participation in a policy network (Blom-Hansen 2002). Institution is defined as "a widely understood rule, norm or strategy that creates incentives for behaviour in repetitive situations" (Crawford and Ostrom 1995). It is included in legitimacy as linked to institution. Likewise, Ostrom (1996) points out that institution has its own challenges, for example its definition. From an environmental aspect, for example, it could take up to 25 years to witness the circumstances of and develop a complex framework for an environmental problem at national, regional and local levels (Imperial 1999). An institutional model should identify multiple layers of actors of all extents from institutional perspectives, explaining how they differ in terms of major structure variables (Ostrom 2007).

Although several studies of policy analysis show that the framework adopts collaborative decision-making, public participation and bringing scientific findings into policy process, related questions on institution design and performance have not been used (Imperial 1999).

2.6.2.2 Process model as political activity

The process model is set up with problem identification as part of the policy. Later, options for policy proposals will be prepared in order to construct accurate policy. After this, the policy will be implemented at various levels, and evaluation of policy will be conducted, which leads to the next policy in the policy cycle. This model presents how policy has been

formulated according to the cycle of policy. It follows the political activity and includes in the policy implementation.

2.6.2.3 Rationalism: policy as maximum social gain

A number of governments have adopted this model to solve the problems that occur in society. A rational framework has been adopted in policy agenda settings to answer the question of problem solutions and grapple with what people really need (Patton and Sawicki 1986; Mazmanian and Sabatier 1989; Bardach 1996). A rational framework begins by setting priorities, definitions and objectives, as well as searching for alternatives. Next, prediction of the outcome and the advantage and disadvantage, strength and weaknesses of each option are identified. Finally, all is considered based on alternatives and the benefits of the selected options as this model considers maximum social gain or benefit. Patton and Sawicki (1986: 88) note that the model requires "making hard choices among other policies" in order to select the most proper alternatives. It may be because rational model is based on a separation of empirical knowledge and value judgements (Weibel and Sabatier 2005). Risse-kappen (1996) argues that in the European Union (EU), use of this analysis should go beyond rational options and integrate with communication theories so that it might develop further.

2.6.2.4 Incrementalism: policy as variation on the past

Much research that has been conducted has found that policies involved with nature and biodiversity have a historical background (Sabatier *et al*. 1995; Koontz and Bodine 2008). Policy trends are incremental and adopt similar options or alternatives in order to solve problems by learning and understanding from the past.

2.6.2.5 Group theory: policy as group equilibrium

This model has adopted group theory and the influence of each group in order to make the policy equal to every group of people in the society. It also begins with policy alternatives, considering how to balance influence among the different groups in society. Similarly, this will occur between conflict groups in a society and the policy will help reach a compromise by selecting options that alleviate any disagreements.

2.6.2.6 Elite model: policy as elite preference

The elite model reflects the preference of powerful group in society, only a few of which are interested in the policy's goals. The policy has been created to serve the selection of the elite. The elite engage in the policy process and influence in the agenda setting stage as well as decision-making one.

To analyse biodiversity policy, the formulation and implementation of policy will then be supported by the context of institutional, social, historical and administrative perspectives as strategic actors involved with stakeholders' relationships according to policy cycle. The following section will describe the decision-making and implementation processes of the policy, including factors involved the biodiversity policy.

2.7 Biodiversity policy evaluation

Evaluation is associated into every stages of policy cycle to assess any positive or negative. Policy evaluation is implemented at the end of policy cycle once the policy has been formulated and finally implemented. The feedback and evaluation criteria are being taken into account from the evaluation of each policy.

2.7.1 An Evaluation of Policy

2.7.1.1 Definition of Evaluation

Evaluation is a necessary part of every decision-making process, and is particularly involved in environmental issues which affect broadly, since they have achieved a sense of urgency and seriousness (Gysen *et al*. 2006). Stokke (1991) stated that the purpose of evaluation is to prove the delivery of results according to objectives, as well as to enhance achievement.

Evaluation is a young discipline in the social sciences and, in fact, has no common definition and concept (Forss 2005).

A number of authors have proposed a definition of evaluation and some of these are presented in Table 2.2

Table 2.2 A comparison of evaluation definitions

Source	Definition
Patton (1986: 14)	The systematic collection of information about the activities, characteristics, and outcomes of programme for use by specific people to reduce uncertainties, improve effectiveness and make decisions with regard to what those programme are doing and affecting.
Scriven (1991: p. 139)	The key sense of the term 'evaluation' refers to the process of determining the *merit*, *worth*, or *value* of something, or the product of that process.
Patton (1997: 23)	The systematic collection of information about the activities, characteristics, and outcomes of programs to make judgements about the program, improve program effectiveness, and/or inform decisions about future programming

Forss (2005: 50)	Evaluation is a concept with such general applicability that it is easy to forget that in practice it must be tailor-made to specific situations.

In this study, evaluation is defined as:

"*A systematic process of verifying the effectiveness of a course of action based on systematic processes and analysis, and values its specific characteristics based on a set of criteria*." (adapted from Patton 1997; Forss 2005)

Given that policy cycle as mentioned earlier, policy process has been presented following the loop of policy stages. Policy analysis helps in learning and identifying what the policies are and their perspectives towards the influenced contexts. Policy evaluation is the next step after policy formulation and implementation. Policy analysis uses a number of models to explain and analyse policies. In the case of biodiversity policy, it has also been analysed in similar terms to other policies. However, there are additional contexts to be incorporated within the elements of nature biodiversity. The model for policy analysis that can explain and understand biodiversity policy as a process has been adopted into Thai biodiversity policy analysis. This model explains how the biodiversity policy has been formulated and implemented. As mentioned earlier, under global level influence, Thailand signed the Convention on Biological Diversity (CBD) in 1992 and this marked the beginning of the biodiversity agenda in Thailand. However, it took more than a decade for Thailand to ratify the CBD, although the first National Biodiversity Strategies and Action Plan (NBSAP) was launched in 1998. Thai biodiversity policy has reflected global influence in biodiversity conservation rather than Thailand's own initiative.

The policy began by setting an agenda, in this case biodiversity conservation and how to manage biodiversity at a national level. Subsequently, policy formation was processed according to the Thai administrative system (Ministry of Natural Resources and Environment (MONRE), 1998). MONRE is the main organisation responsible for adopting

the CBD into practice as well as preparing the NBSAP. Ministry of Science and Technology (MOST) is another cooperative organisation that has responsibility for promoting biodiversity and establishing a centre for biodiversity knowledge and research. Next, after all the alternatives have been taken into account, the decision-making process will begin and this involves a number of government organisations, for example, MONRE, the cabinet, and the National Environment Board (NEB). Once the policy has been approved, it will be implemented. This stage engages central and local government. It also includes academics, non-governmental organisations (NGOs), communities and indigenous people, for instance, as stated in the CBD guidelines for NBSAP implementation. The policy evaluation stage will be established after the decision-making step as well as implementation, so that the policy can be judged and the actual outcome determined in order to make improvements for the next policy process.

Nevertheless, evaluation of biodiversity policy should involve process and outcome orientation because the policy cycle is viewed as a holism rather than as a partial process (Saengchai 2002).

2.7.1.2 Rationale of Evaluating Biodiversity Policy

As mentioned in Chapter 2, environmental problems have some special characteristics, namely problems based on knowledge. Moreover, according to a number of studies, environmental problems are particularly difficult to solve (Weale 1992; Lafferty and Meadowcroft 1996). However, knowledge is influenced by the environment and both could be affected each other. (Mickwitz 2003). Fischer (2000) stated that policy development included a notable role of scientific knowledge and discourse. The complexity of the policies and uncertainties about the social and natural aspects of the policies, as well as the complexity of political process and multilevel governance, have made evaluation difficult (Stamme 2004). It should be noted that evaluation of government policy includes process evaluation and it is this that provides most information on how the policy should be managed or developed in the future (Purdon *et al*. 2001).

The evaluation of environmental policies remains a fairly uncertain area (Mickwitz 2003; Crabbe and Leroy 2008). Biodiversity is just one environmental issue and it has its own specific features. There is some difficulty regarding the extent to which generic methods of policy evaluation apply to environmental policies. In terms of biodiversity policy, the rationale behind its evaluation is different from other types of environmental issue that includes risk, uncertainty, ignorance and indeterminacy (Wynne 1992), biodiversity issue includes human-nature activities and context of social and culture (Vermeulen 2004). Because possible outcomes cannot be defined and their probabilities cannot be designated in a meaningful way, the four aspects according to Wynne (1992) can be merged (Mickwitz 2003). Moreover, there is difficulty over the definition for understanding of basis formation of biodiversity policy at various action scales as biodiversity is a relatively new policy issue (Peuhkuri and Jokiken 1998). In addition, the perspective of global biodiversity aspect should be recognised not only westernising but also to other diverse culture at local level (Burningham and O'Brien 1994). Thus, a systematic evaluation of the environmental policy is required to guarantee and evaluate the success of the process and how it addresses explicit public concern (Organisation for Economic Co-operation and Development 2005). Similarly, in the toolkit for conservation and the sustainable use of biodiversity, CBD (2007) notes that this success can be brought about through stakeholder networking and cooperation between all sectors of society.

Reflecting the fact that biodiversity policy development and implementation are important to all nations, as stated in the principles and guidelines of the ecosystem approach (CBD 1999, 2004), the decision-making process should be open to the public. Slootweg (2001) argues that decision-makers will not take biodiversity-related issues into account if there are no stakeholders in the biodiversity area. Similarly, Hyndman (1994) points out that a top-down policy has continued to dominate cultural diversity at the international level. In developing countries, the priority policy objective is the alleviation of poverty (CBD 2004), whereas different societies and local communities have often been neglected as government

agencies lack understanding of cultural diversity and do not interact with local people (Vermeulen, 2004).

Indeed, evaluations of biodiversity policy research have been conducted by a number of scholars and various approaches have been applied to research on evaluating biodiversity policy (Angelstam *et al*. 2003; Toogood, Gilbert and Rientjes 2004; Dwyer and Maye 2009). Although mainstreaming biodiversity has usually been adopted in development policy, evaluations of policy have been performed by biodiversity specialists with a lack of experience in other issues related to planning (Swiderska 2002a). Office of National Environmental Policy and Planning (ONEP) (2009) also points out that biodiversity policy evaluation was conducted following the CBD guidelines; however, the evaluations have been done with limited time and budget, in accordance with the annual budget allowance.

Owing to the difficulties in rigorous evaluation, the evaluation of biodiversity policy is rarely conducted (Wong *et al*. 2007). Besides, different political constraints have led to different approaches in evaluating biodiversity policy (ONEP 2009). As a result, evaluation of the effectiveness of biodiversity policy development and implementation needs improvement and research. Therefore, any approach to tackle crucial issues in evaluation research and practice should be clearly focused on specific and explicit concerns (Mermet *et al*. 2010). It can be said that the evaluation aimed clearly at and accordingly, the effectiveness judgement in the different power relationships (Patton 1997).

There have been several cases of policy evaluation on biodiversity. For example, research carried out on the comparative analysis of policy delivery for Ireland and England's Rural Development Programme (RDP), funded by the European Union. Although there are similarities in English and Irish RDPs, this study points out that differences in design, delivery and context, reflecting rural characteristics, culture and institutional change led to effective performance (Dwyer and Maye 2009). Several studies on policy evaluation by the EU have been carried out regarding the delivery and policy implementation (Turnpenny *et al*. 2004, 2008; Hertin *et al*. 2009; Slingenberg *et al*. 2009).

Recent debates on policy evaluation note that there are weaknesses in the EU evaluations. Midmore *et al*. (cited in Dwyer and Maye, 2009) point out that:

> "*Formal policy evaluation methods have become institutionalised in the EU, but there are inherent weaknesses in tracing the chain of causality from actions to impacts. Traditional techniques from evaluating deadweight, substitution and displacement effects only measure the extent to which policy measures fulfil intended policy objectives, but fail to grapple with more important questions for policy development, such as how and why they operate in the way they do*".

This illustrates that policy evaluation should concern more options in order to gain better understanding of critical factors in policy performance. In many cases of biodiversity evaluation a quantitative method has been adopted. Economic indicators have also been used in policy evaluation in order to present how much biodiversity loss in terms of percentage of benefit gain in economic aspect (Kanongdate *et al*. 2012).

By contrast, qualitative assessment reflects a value judgement rather than by parameter of numerical data and is usually conducted through questionnaires, interviews and document analysis (De Stefano *et al*. 2010). A few studies have adopted mixed qualitative and quantitative approaches in order to obtain particular understanding and perspectives from biodiversity policy. Harrison *et al*. (2012) studied cross-sectoral climate change policy through stakeholders and assessment of the socio-economic context. The study of Tonle Sap lake of Cambodia also adopted quantitative and qualitative methods to monitor biodiversity at a local level as well in an institutional and social context (Seak, Schmidt-Vogt and Thapa 2012). Nevertheless, qualitative research can often provide more particular aspects and context than quantitative one in order to evaluate the policy with regard to political, social and cultural perspectives. To evaluate policy, evaluation framework should be established to set the theories and approaches involved with the context and criteria for

the evaluation. The next section is going to demonstrate an evaluation framework for biodiversity policy for this study.

2.8 Evaluation Framework Development for Biodiversity Policy

As previously mentioned, not only are time and resources invested in responding to evaluations of biodiversity policy, but also the need for effectiveness is increasing. Existing evaluation approaches vary widely with regards to differences in theory, objective, scope, technique and discipline (Oels 2008). In addition, there are a number of discussions by both evaluation and environmental studies scholars about the complexity of this field (Mermet 2010). Discussions of expectations from evaluations, regarding policies as well as political views, have been taken into account by the multiple stakeholders and consideration is placed upon the centre of evaluation to provide the best practice (United Nations Development Programme (UNDP) 1997; House and Howe 1998) because the fact that environmental policies 'cross purposes' with other policies has been a key theme of the environmental field from the beginning (Mermet 2010). It should be noted that research on effectiveness of international environmental agreement focuses more on outcomes of the North countries, the United States and Europe (Steinberg 2001). Biodiversity policy, where biodiversity resides mostly developing countries, depends only on national government authorities although this issue is supranational interest (Ascher 1999).

However, the context, change of meaning and contribution of a chosen evaluation approach has to be considered, in addition to the vital subject of the evaluating organisation, including policy-making bodies, integration balances, the balance of goal differences, mission, employing techniques, etc. (Mintzberg, 1978). Indeed, approaches to biodiversity policy evaluations are primarily developed from the traditional evaluation of environmental policy that focused on conservation. Mayer and Bass (1999) also point out that policy is, in fact, shaped by political, social and economic perspectives, and may also be under pressure from civil society, resource-use policy history and different economic circumstances. Therefore, policy evaluation should take into account the historical timeline and context in

order to discover factors that have influenced policy. Besides, Genter, Bailey and Moore (2003) address that less effort has been focused on policy evaluation because the biodiversity policy-making focuses more on development and implementation. This leads to a gap in the policy cycle and, moreover, "the nature of biodiversity conservation can make evaluations more difficult than in other fields (Ferraro and Pattanayak 2006: 486). They also stress that "where outcomes are local, strong and complex spillover effects can occur and enforcement and cheating can be difficult to verify" (Ferraro and Pattanayak 2006: 486). As one of the developing countries, Thailand's biodiversity policy has some gaps to address from the policy cycle, for example, the policy development, implementation, evaluation and monitoring, and this could lead to better biodiversity conservation according to CBD (ONEP 2009). Therefore, a critical evaluation of biodiversity policy is needed to address gaps and should be holistically and systematically taken into account of the relevant contexts of the country in order to contribute a quality evaluation of biodiversity policy.

The following section presents these different approaches to the evaluation of biodiversity policy. Some of the findings of the different approaches are also illustrated. Furthermore, research which may furnish specific perspectives of successful biodiversity policy will be discussed. In order to develop a set of criteria for evaluation, various biodiversity policy studies were analysed to facilitate more knowledge. A framework for both the conceptualisation and evaluation of the effectiveness of biodiversity policy for this study will be presented in the next sections.

2.8.1 Process-orientated Evaluation

The evaluation process cannot focus on any single biodiversity component alone because this is insufficient to protect other components and promote the inclusion of criteria related to ecosystem and environmental diversity for capturing biodiversity value (Bonn and Gaston 2005). At the beginning, this approach was initiated by Quinn and Rohrbaugh (1983). They focused on two foundation dimensions. The first was related to the structure

of the process, underlining the flexibility and control of the process. The second was related to the focus of the process, emphasising the needs of those directly affected and the needs of the wider public. Both dimensions combined to define the distinct rational, empirical, consensual and political perspectives on effective participation processes. From contextual factors, process-orientated evaluation can help engage with wider backgrounds, for example, historical, social, economic, cultural and political contexts. This involves developing case study specific accounts of not just how policy is designed but how it is implemented on the ground capturing implementation processes from a wide range of stakeholders rather than the normal suspects.

2.8.2 Outcome-orientated Evaluation

The outcome of the policy which the European Environmental Agency (EEA 2001) defined is the response of the target group to the output, as consistent with the policy objectives. The effectiveness of an environmental policy has been judged and defined in terms of the outcome achieved or the result of the processes, particularly the legitimacy of the decision-making (Vedung 1997; Mickwitz 2003, Gysen *et al*. 2006; Mermet *et al*. 2010). Therefore, outcome evaluation is desirable for decision-makers or actors in order to answer the question of whether an environmental policy has had its intended effects according to a defined set of goals (Mickwitz 2000).

A number of researchers have pointed out that evaluating the outcomes of an environmental policy can provide evidence of which initiative works and how to improve it (Bruyninckx and Cioppa 2000; EEA 2001; Gysen *et al*. 2006: Mermet *et al*. 2010). Yet, evaluation of environmental policy outcomes is less developed (Knappe and Kim, 1998; Mickwitz, 2003) and may be ambiguous and uncertain due to institutional and societal contexts, or the nature of the environmental issues involved.

Environmental policy outcomes are typically too complicated to be specific and measurable (Crabbe and Leroy, 2008). However, many researchers have attempted a variety of

evaluation approaches to tackle some of the complications of defining goals (Stame, 2004). This leads to one of the most controversial arguments, that over which goals should be evaluated (Gysen *et al*., 2006). For example, both main and side effects have been taken into account in the research of Gysen *et al*. (2006) that answer to the descriptive and causal questions within uncertainty perspective. In addition, whilst an authority may measure environmental policy achievement in terms of decisions, legitimacy or public support (Lafferty and Hovden 2003), the successful outcome may appear from public satisfaction with the policy implementation (Mermet *et al*. 2010). Balmford *et al*. (2005) called for the establishment of indicators of biodiversity and ecosystem functions and services that are rigorous and applicable in order to contribute to achieving the CBD 2010 target. In 2006, the COP adopted a list of outcome-oriented indicators to measure progress towards the CBD 2010 target. These indicators did not meet the requirements of being rigorous, repeatable, widely accepted and easily understood (Heink and Kowari 2010).

2.9 Culturally sensitive policy evaluation

There is another way of policy evaluation that is pointed out based on cultural sensitivity. The central concern is diversity of sociocultural perspectives and experiences have been taken into account beyond narrow culture-bound assumptions (Hopson 2003). An example of the study presents that "cultural differences must be understood at the level of social structure and intercultural or cross-cultural communication, in the analysis of cultural sensitivity in a South Korean context" (Smith and Jang 2002). This shows how culture influences in people's behaviours and decisions. Hopson (2003) pointed out that "cultural differences are not merely surface variations in style, preference and behavior, but fundamental differences in how people experience social life, evaluate information, decide what is true, attribute causes to social phenomenon and understand their place in the world". Therefore, culturally sensitive policy evaluation is a useful way of evaluation in order to capture more specific characteristics of different sociocultural background in details.

The following section presents a social goal-based evaluation, with a number of examples.

2.9.1 Evaluation Based on Social Goals

A more recent evaluation framework has developed from the fields of science and technology, which have a relatively long history of environmental policy (Mermet *et al*. 2010). The framework assesses the outcomes of environmental policy processes, but uses a concerns-focused evaluation for ambiguous and conflicting policies.

Typically, the outcome of a decision-making process refers to its substantive decisions, conclusions or recommendations, for example, environmental problems should receive priority attention or special habitats should be conserved. These substantive outcomes can be evaluated and even compared with other decision-making processes using a variety of criteria, including stakeholder with the result, cost-effectiveness, or risk minimisation. A more expansive interpretation of outcomes includes the extent to which an environmental policy process has achieved its goals in social terms (Scriven 1991; Gysen *et al*. 2002). The next research was conducted by Beierle and Cayford (2002), from Resources for the Future. They developed five social goals as evaluation criteria, to: incorporate public values into decision-making, improve the substantive quality of decisions, resolve conflict, increase trust in institutions, and educate and inform the public.

A particular goal, such as increasing the substantive quality of decisions, acknowledges the public as a legitimate source of knowledge, contributing towards the decision and enhancing political support. Biodiversity policy needs involvement from both government and local people in order for a policy process to be effective. Another type of goal, educating and informing the public, is based on the basic argument that within a democratic arena, citizens have a right to be involved in decisions that may impact on them. To participate effectively, the public should have enough knowledge about all relevant issues in order to formulate and discuss the outcomes with other parties.

On the other hand, goal-free evaluation was developed mainly in response to criticism of the goal-achievement model (Mickwitz 2003). A goal-free evaluation should be carried out without the evaluator although the goal awareness of the evaluation aspect and Vedung (1997) argued that democratic transparency barely corresponds to elected political bodies.

2.9.2 Evaluation Based on Mixed Process and Outcome

One of the most controversial debates on evaluation concerns what should be evaluated, the process or the outcome. In fact, evaluating the effectiveness of an environmental policy should focus on whether the process achieves both process and outcome goals. There are a number of researchers who evaluated the policy engaging mixed process and outcome. For example, Papageorgiou and Voggiatzakis (2006) evaluated the integrative nature of protection policy effectiveness in Greece using both process and outcome evaluation and found that major failures in integrative nature conservation indicated political–economic power structures in the mainstream policy. In addition, Crabbe and Leroy (2008) systematically reviewed 22 approaches and examined how they contribute to the evaluation of environmental policy. It was found that the existing approaches can make many useful contributions, some important aspects, however, are treated inadequately.

More recent and productive contributions to the environmental policy field, in particular the development of evaluation frameworks, have been conducted by Crabbe and Leroy (2008). They highlighted three understandable criteria that environmental policy should comply with in order to be effective for both decision-making processes and good implementation practice. They formulated these criteria from a literature review and classified them into three groups. The first group was ‘juridical criteria’ which concern aspects of a method that effectively involve the control and accountability of the policy.

The second group was ‘economic criteria’ which are a necessary part of the process, and confirm that the policy was taking place in an effective way. The economic criteria are composed of effectiveness and efficiency. Moreover, the outcome of the process should

have an influence on the decision. Stakeholders should have easy access to substantial resources to enable them to be informed effectively. The goals should be distinctly identified in terms of nature and scope. The implementation process should be organised with an effective budget, and should employ suitable mechanisms to clearly structure and display the decision-making process. The final group was 'political criteria' which involved responsiveness and transparency. The decision-making process should be administrated in an independent and transparent way so that the affected individuals can see what is going on and how decisions are made. Stakeholders should be engaged early in the process and be broadly representative of the affected society.

From the evaluation of selected environmental policy cases examined using these criteria, it was very difficult to justify which technique is the best, but the most suitable methods for biodiversity policy are likely to be mixed approaches (Angelstam *et al*. 2003; Gysen *et al*. 2006). Whilst their framework contains criteria emphasising the procedural features of environmental policy, a valuable contribution is made in articulating the outcome criteria. Their studies further develop and apply environmental policy and biodiversity policy in particular, and the evaluation frameworks which were used as a key preference throughout this thesis. This study adopts environmental policy evaluation criteria to evaluate biodiversity policy because biodiversity policy is engaged in an environmental policy at national level. Therefore, it should be addressed in holistic and systematic evaluation that taking into account of political, economic, social, cultural and environmental matters. In addition, culturally sensitive policy evaluation has been taken into account to evaluate Thailand as a selected specific case study reflecting unique cultural difference influences on biodiversity policy. A conceptual framework of Policy Evaluation is presented below (Figure 2.1) and will be adopted for this study in an analytical framework for biodiversity policy evaluation in Figure 2.3.

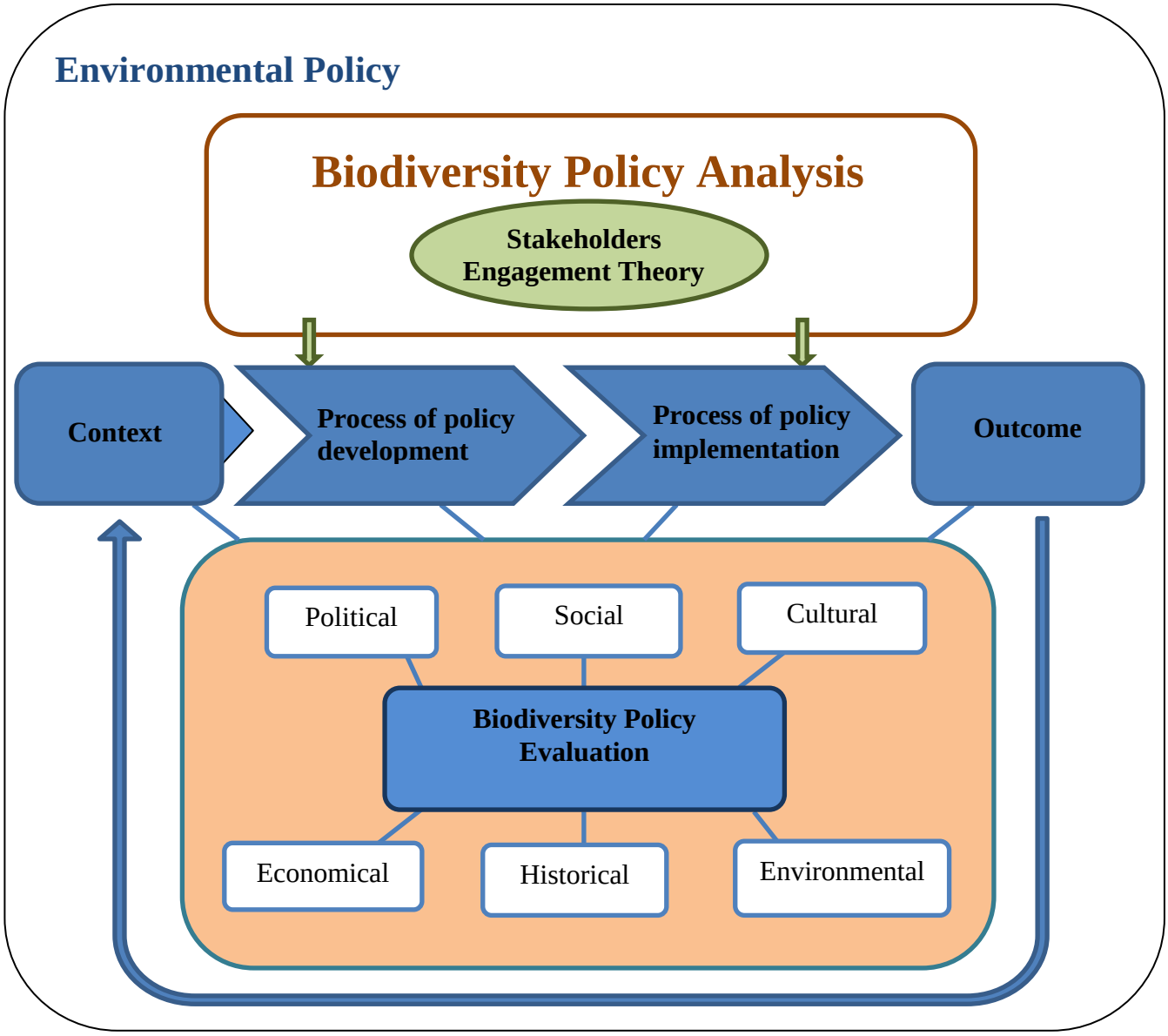

Figure 2.3 A Conceptual Framework for Biodiversity Policy Evaluation

2.10 From Evaluation Framework to Evaluation Criteria

One of the main objectives of this research is to identify specific political and logistical constraints to the effective development and implementation of biodiversity policy within the Thai context. To achieve these aims, evaluation criteria were developed based on an integration of all the evaluation approaches discussed previously.

As previously mentioned, most interpretations of effective environmental policy are defined by two categories: the success of the biodiversity policy creation process, and the success of the outcomes of the process (Crabbe and Leroy 2008). There is both a vital realistic need and academic interest in identifying the related factors that influence the success and failure of environmental policy (Papageorgiou 2006). Many practitioners and researchers have made an effort to define which elements make environmental policy processes effective (Praxis 1988; Mickwitz 2003; Gysen *et al*. 2006; Ohowa 2009; Mermet *et al*. 2010). The list of common factors usually identified in the literature as being relevant to the success of environmental policy adopted for biodiversity policy evaluation in this study are summarised in Table 2.3.

Table 2.3 Evaluation criteria adopted for this study

Evaluation Criteria		**Definition**	**Requirement to be Effective**
Process-orientated criteria	***Clarification of goals***	The nature and scope of the biodiversity policy goals and tasks are clearly identified.	The policy process is about goal formulation, organisational solutions and prioritising options for biodiversity (Angelstam 2003).
	Inclusiveness and adequate representativeness	The biodiversity policy is inclusive and included all stakeholders who are affected by the decisions and the wider public who are interested.	A full range of potentially affected individuals should be clearly identified (Praxis 1988; Reed *et al.* 2009). Integration between natural and social sciences is essential for effective management of biodiversity (Vogt *et al*.

			2002; Vermeulen 2004).
	Transparency	The policy process is transparent in order to let the public see what is going on and how the decisions are made.	The public should be able to see and trace how their input was incorporated and used in the decision-making process and how the decisions are being made (Mickwitz 2003; CBD 2009).
	Multiple and appropriate participation methods	The participation methods used for conducting and displaying the decision-making process should be varied and appropriate to the situations and involved parties.	The methods used are appropriate to the situations and involved parties achieve their initial aims (Creighton 2005; Swiderska 2001)
	Adequate and accessible resources and time and place availability	The stakeholders have an ability to access all the appropriate resources relevant to the decision-making process to fulfil their knowledge.	The public are provided with and informed how to access to all relevant documents to the decision-making process (Mermet *et al*. 2010; Reed *et al.* 2009).
Outcome-orientated criteria	***Impact and influence of biodiversity policy***	The degree to which the change of the policy issue, caused by the policy, is in line with the policy goals.	Environmentally effective institution eradicates or alleviates anthropogenic deductions from and/or deposits to

		and ecological system or systems in balance with the system's natural regenerative processes (Bruyninckx and Cioppa 2000; Gysen *et al*. 2002).
Institutional Criterion	The match of the output of a given policy with the output objective of the policy.	The policy works as expected (Ohowa 2009).
Target Group	The degree to which the target group responds to the policy, due to the policy, as aimed for by that policy.	Policy focuses on changes to actor behaviour, measures outcome effect with reference to outcome objectives (Gysen *et al*. 2002).
Societal Criterion	The extent to which the effect is in line with broader societal objectives.	The impact or impact effects satisfies societal needs (Scriven 1991; Gysen *et al*. 2002)

2.11 An Analytical Framework for an Evaluation of Thai Biodiversity Policy Development and Implementation of this Study

From the previous section of this chapter, it is clear that there has been some progress in improving the evaluation of biodiversity policy, and it is understandable that the evaluation framework should include both process and outcome properties (Mickwitz 2003). However, there is no recognition of best evaluation practice; a balance of all relevant information is required when designing an evaluation framework (Gysen *et al*. 2006). There is also no

generally applicable or commonly accepted framework to evaluate the effectiveness of an environmental policy (Mickwitz 2003, Crabbe and Leroy 2008; Mermet 2010). As biodiversity policy is a specific policy within the scope of environmental policy, the study adopted environmental policy criteria in order to holistically investigate and systematically evaluate effectiveness of biodiversity policy in Thailand. Since systematic evaluation, which could draw general conclusions, has been rare in biodiversity policy, the most significant obstacle is possibly in creating a rigorous evaluation framework (Mickwitz 2003). Typically, the evaluation was conducted by the agency involved in the policy. Inevitably, biases in assessment resulted from the narrowly defined objectives which were generated (Vedung 1997). In addition, different stakeholders in the policy process had different opinions of the objectives, as well as the evaluation criteria. As a result, the conclusions were drawn according to the political or institutional context (Gysen *et al*. 2002).

Some consistency in theoretical frameworks is essential in order to provide a rigorous evaluation of biodiversity policy processes and create conclusions that are generalisable (Crabbe and Leroy 2008). The framework should contain clear expression of an initiative in order to correctly describe the specific characteristics of the process, for example, the resources used, the objectives and the desirable outcomes. A study based on a clear framework will make the findings more transparent and consistent (Mickwitz 2003). Therefore, a comprehensive evaluation framework is essential to suggest improvements that contribute towards an effective environmental policy (Mermet *et al*. 2010).

It should be mentioned that development of an evaluation framework is a crucial part of this study. This is because the research intends to investigate whether the biodiversity policy development and implementation conducted in the case study were effective, and in particular how biodiversity policy can be improved to make it more effective. The evaluation framework could help verify what is to be evaluated, what the evaluation criteria are, and what types of data are needed for an evaluation (Yosie and Herbst 1998; Mermet 2010). A well-performed and organised biodiversity policy is crucial in biodiversity

management in general because it can encourage and facilitate cooperation, particularly in biodiversity policy. This contributes to an effective decision-making process and can be done through a systematic evaluation (Hertin 2009).

In this section, a framework for the evaluation of biodiversity policy development and implementation in this study is developed and presented in Figure 2.4**.** Moving from left to right in the figure, the framework depicts the three main phases of evaluation: the context in which includes dimension of historical background and Thai biodiversity problem, the process of the policy development and implementation, and the outcome of the biodiversity policy. The model focuses on different perspectives of the stakeholders in the biodiversity policy processes as well as the roles and influences they had. Policy analysis has been conducted regarding this aspect. The dimensions of these phases are analysed to represent the effectiveness of the biodiversity policy. Effectiveness is portrayed in terms of relevant indications based on stakeholders' responses, and revealed their perceptions, attitudes and satisfactions. Moreover, the process of policy development in is evaluated in accordance with equity and inclusiveness of policy, characteristic of stakeholders, methodology employed and availability of resources.

In addition, the framework highlights the policy evaluation as a holistic approach considering the whole policy cycle, as mentioned in section 2.6. This will help to understand the characteristics of Thai biodiversity policy in terms of how it has been implemented at the national and local level according to CBD (2004). Moreover, the framework will not only present a linear evaluation, but also take into account Thai historical, political, economic, social, cultural and environmental backgrounds in order to understand Thailand's biodiversity policy process. The evaluation framework includes the country's background, for example, institutional, social, legislative backgrounds, and stakeholder relations, as stated in Chapters 1 and the previous sections, in order to illustrate the actual situation, how the policy has been created and implemented and the outcome of the policy. Given these indicators, the dynamics of the policies and politics will be more understood (Hajer 1995; Peuhkuri and Jokinen 1999; Hertin *et al*. 2009).

The first phase is related to an evaluation of the biodiversity policy context. As discussed earlier, every environmental policy, and biodiversity policy in particular, is based within a particular social context and this should be made explicit in order to understand social activities influenced in the policy (Lowe and Ward 2007). However, some existing evaluation frameworks for environmental policy development rarely integrate social and political contexts (Genter, Bailey and Moore 2003). Miteva, Pattanayak and Ferraro (2012) also confirm that evaluation of common conservation is rare and needed to develop so that biodiversity policy can be better integrated as interdisciplinary field. The context evaluation is mentioned as an important part of the study because there are diverse contexts within which biodiversity policy may be conducted and these contexts can shape the effects that the outcomes of the process have on stakeholders.

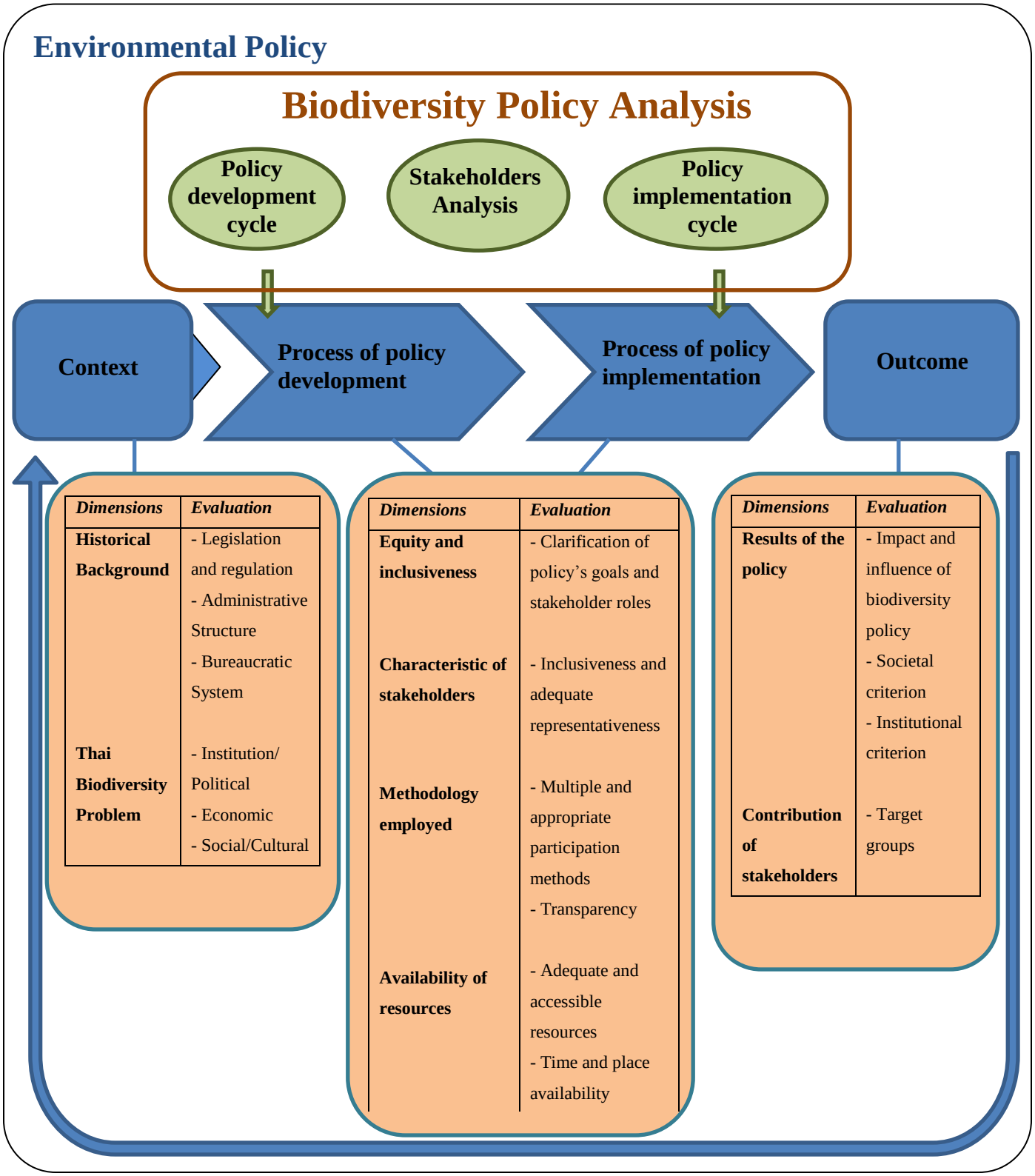

Figure 2.4 An Analytical Evaluation Framework of Biodiversity Policy Development and Implementation Evaluation for this Study

In order to understand thoroughly the mechanisms of biodiversity policy development and implementation in the case study, it is essential to assess the social context within which the policy takes place (Mickwitz 2003). However, there are other significant aspects that should be considered. Political contexts and institutional arrangements, such as legislative provisions and administrative structures, usually affect the provision and conduct of the biodiversity policy (Angelstam *et al*. 2003). These issues should not be disregarded and must be considered and understood (Thabchumpon 2002; Gysen *et al*. 2006). Evaluation of these aspects can provide a broad view of the creation of the environmental policy, presenting varying degrees of justification (OECD 1994). In addition, environmental policy and biodiversity policy in particular are complex and require a cautious analysis of the characteristics and the situation under which they are developed and implemented (Weisbuch 2000; Ferraro and Pattanayak 2006; Mermet 2010). Thus, the processes of the biodiversity policy and implementation in this study are crucial in order to truly understand which aspects underlie the problems and to properly establish appropriate resolution approaches (Gysen *et al.* 2002; Ohowa 2008).

Moving to the middle of Figure 2.4, a large body of evaluation focuses exclusively on studying the effectiveness of the biodiversity policy process. This framework defines the need to evaluate the biodiversity policy process against policy's perspectives which may influence policy formation within the process. A set of the evaluation criteria and their details are illustrated in Table 2.3. The evaluation consists of four main sub-categories: decision-making process, stakeholder characteristics, methodology employed and availability of resources. The evaluation criteria of the policy development process are presented as follow:

First, an evaluation of the decision-making process aims at assessing how well the goals and stakeholder roles were clarified to the public and how well the public were educated and informed by the authorities. This requires clear goals and tasks identification, prioritising biodiversity (Angelstam 2003). Decision-making process should include all

relevant stakeholders who are affected (Praxis 1988; Reed *et al*. 2009) and public who are interested (Anuradha, Taneja and Kothari 2001; Vogt *et al.* 2002). Public should be able to access and incorporate in the policy process and trace how decision has made in order to be transparent policy process (Mickwitz 2003; CBD 2009). Local communities and people should be included in different situations of policy making process and let all parties involve (Swiderska 2001; Creighton 2005). Moreover, the public should be well-informed and educated to all biodiversity information which affect them and complete in decision making process (Reed *et al.* 2009; Mermet *et al.* 2010). These elements will lead to effective policy development process if these have been included in the process.

Second, evaluating the implementation characteristics focuses on the identification of stakeholders and the inclusiveness and adequate representativeness of the affected individuals (Vermeulen 2004). Actor-linkage matrices will be adopted in order to provide relevant stakeholders relationships in the process (Matsaert 2001; Reed et al 2009) The evaluation focuses on how well these aspects were implemented both national and local level to learn from different contexts of social, cultural, economic and ecology that provide various characteristics of local people towards biodiversity policy (Prager and Freese 2009).

Third, an evaluation of the methodology employed stresses how the implementation methods were employed, including how appropriate the techniques were, when they were employed, how transparent they were and how they were employed. This will address specific characteristic of Thai bureaucracy and administrative system from national level to local level (Bunyakorn 2000) and prove that the current Constitution is actually implemented towards decentralisation at local level (Office of the council of state 2007). Interactions among stakeholders are also the focus of the analysis through stakeholder analysis. Culturally sensitive policy evaluation is adopted in this study to indicate explicit characteristics of Thai culture resulted in Thai biodiversity policy. Semi-structured, in-depth unstructured interviews and focus groups conducted in national and local level to

complement and analyse how biodiversity implementation has put into practice (Swiderska 2001).

Finally, an evaluation of the availability of resources emphasises how adequate and accessible the affected individuals' resources were, in particular the information about biodiversity conservation, and how they were provided (Prager and Freese 2009). The evaluation also investigates the time and place of the implementation process.

To the right of the figure is an evaluation of the outcomes of the policy process, which are measured from the stakeholders' viewpoints and experience. This evaluation depicts two sets of outcome-orientated evaluation, which are routinely considered to be core outcomes of the process: first, the results of the implementation. The integration of public values and concerns in the decision-making process has been taken into account (Prager and Freese 2009; Reed *et al.* 2009). For example, affected individuals need to be informed of the decision and how their input was considered (Abelson and Gauvin 2006). Another outcome, the contributions of the implementation and activities, emphasises realities, views and participation among stakeholders, and, importantly, biodiversity conservation for their livelihoods. This will reflect Thai society towards biodiversity conservation and participation in this issue since local people have not been directly participated in the biodiversity policy process (Saengchai 2002). This can be justified institutional performance towards biodiversity policy attempting to conserve biodiversity and solve the problem of biodiversity loss. Vermeulen (2004) mentions that views of local people should be taken into account, and it can be judged whether the policy has been socially satisfied (Jones-Walters and Cil 2011).

It can be indicated that this evaluation framework attempts to make more explicit the factors that should be considered when evaluating both the processes and the outcomes of a policy and implementation process. The framework facilitates a balanced evaluation that indicates not only the effectiveness, but also the factors involved in that effectiveness (Smith 1984). The evaluation criteria also give significant consideration to the processes and outcomes. However, because the time between action and ultimate effects of a

biodiversity policy is often very long due to the nature of its processes, only some effects can be evaluated at any one point in time (Mickwitz 2003).

Finally, this evaluation framework will be applied throughout this study as a conceptual framework for evaluating the effectiveness of biodiversity policy development and implementation in the case study. Thai context will be taken into account that biodiversity policy has been influenced from Thai politics, social, economic, cultural perspectives. The results of the evaluations and discussion are presented in Chapters 5, 6, 7 respectively.

2.12 Summary

This chapter has reviewed the literature in order to establish conceptual frameworks for developing knowledge to guide and answer the research questions of this thesis, covering three major issues: biodiversity conservation, biodiversity policy and biodiversity policy evaluation. All relevant definitions and concepts are clarified, in particular biodiversity conservation problems from different viewpoints, biodiversity policy and effective biodiversity policy plus cultural difference in policy implementation. Importantly, the conceptual framework for interpreting and analysing biodiversity policy, the biodiversity conservation problem and effective biodiversity policy processes, have been established. These issues are all relevant and will be helpful in analysing, supporting and forming discussions thought out the study. Review of evaluation of the effectiveness of biodiversity policy is presented from which relevant evaluation criteria have been developed for this research.

At present, biodiversity issues are involved in human society and become more complicated and difficult to handle because of complex interactions among stakeholders and the ecosystem (Walker and Daniels 2001). Importantly, no single approach is capable of adequately addressing these complex problems (Gysen *et al*. 2002; Haddock *et al*. 2006). A traditional command-and-control approach is viewed as unsuccessful in dealing with environmental issues, particularly biodiversity. These disputes have high potential to divide

societies (Peterson and Franks 2006). Accordingly, an effective approach to resolving problems with biodiversity policy is essential.

From global widespread recognition that governments' decisions cannot be legitimate without broad biodiversity conservation, biodiversity policy is acknowledged being as a proper strategy to deal with these problems (Guikema and Milke 1999; Farmar-Bowers and Lane 2008; Martin-Lopez *et al*. 2009). There is increased demand to include biodiversity issues in decision-making processes, and it has increasingly been recognised as a key element of biodiversity management (Acutt 1998; Hugher *et al*. 2002; Haddock 2006). The rationale behind this is to decentralise decision-making to the public in a democracy. In implementing biodiversity policy, the holistic process is depicted as a significant means of reducing misunderstanding and raising awareness because it involves all stakeholders, in particular those people affected by the policy (Angelstam *et al*. 2003; Crouch and Smith 2011).

The literature cited in this chapter is useful in developing an understanding of biodiversity conservation and how it relates to biodiversity policy before conducting the study. In addition, the conceptual framework developed for this chapter are also essential and helpful in interpreting, analysing, and integrating analytical concept of biodiversity policy, for policy evaluation in particular. Also, the analytical evaluation framework is useful for supporting and forming a discussion of the research findings in Chapters 5 and 6. In the next chapter, a Thai context is demonstrated for better understanding of particular context of political, economic, social, cultural and environmental perspectives so that the research is clearly analysed and interpreted.

Chapter 3 Context of Thai Biodiversity Policy

3.1 Introduction

At national level, biodiversity policy plays a key role to maintain biodiversity conservation and ensures that its implementation is effectively enforced. For this reason, the biodiversity policy has been evaluated to investigate and examine its process. This chapter also describes issues related to the environmental problems as a background associated with policy processes within the Thai context in order to understand the background of the country where the problems exist, and the current Thai legal framework regarding environmental policy in general and biodiversity in particular. The relationships between the laws and regulations and the policy process in Thailand are generally presented as well as previous and current Constitution of Thailand and principal environmental laws. The administration of biodiversity policy is demonstrated in this chapter complementarily with Thai bureaucratic administration in general.

3.2 Environmental Problems in Thailand

In recent years, environmental issues have become of greater concern to people in Thailand. There are several types of environmental issues, for example, air pollution, water management, deforestation and biodiversity losses. In previous years, Thailand Environmental Institute (2005) stated that the increase rate of natural resources exploitation has been caused by rapid economic development. Ministry of Natural Resources and Environment (2006) also pointed out that the deforestation has been speedily increased particularly in watershed area since increase of population. For this reason, the need of raw materials has been considerably increased to provide people's consumptions and according to the national development as well.

Likewise, to support the industrialisation, natural resources have been abused throughout the country, although found that the loss of natural resources has become widely public concern (Office of Environmental Policy and Planning 1998; Nicro and Apikul 1999). It was found that there are a number of serious environmental problems occurred in the country where development of industry has been promoted (Thabchumpon 2002; Violette and Limanon 2003), mainly considerable natural resources loss (MONRE 2006). As a result, the environment has degraded to the point where it might impede future conservation (King Prajadhipok's Institute 2007). The problems of Thailand's environmental conservation have been stated in a number of research (Muanpawong 1999; Bureekul 2000; Shytov 2003).

In addition, ineffective management of the environment and natural resources worsen these issues because of the press on the country's goods export policy (Thabchumpon 2002; TEI 2005). Shytov (2003) addresses that Thai government prioritises economic development and industrial growth rather than focusing on social and environmental perspectives as this can be found in National Board of Economic and Social Development Plan. This has caused many conflicts over natural resource usage and allocation (Thabchumpon 2002). Conflicts found in several regions of Thailand, between in the locals and industrial sectors, for example, export-oriented prawn farming in the south (MONRE 2004; 2005). The problem of land use for tourism and industrial development is another example which occurred throughout the country (TEI 2005). Land use problems are as follows. A number of locals have settled down in the protected area and this leads to extensive deforestation (MONRE 2006), and agricultural extensive plantations have also led to many conflicts between people and government agencies (Bureekul 2000). On the other hand, the funding for environment has always been at critical levels (MONRE 2008), and is lower than that funding for economic and social development (NESDB 2005; TEI 2005).

Nonetheless, the conservation of nature is essential and should critically be in public concern. The process, however, which the government explains conservation and gains support from local communities has failed (Vatanasapt 2003). A lack of public participation

has been found in the implementation of environmental policy in Thailand related to contradictions of civil societies (Ogunlana, Yotsinsak and Yisa 2001; TEI 2005). A number of scholars recommend that there should be appropriate public participation during the decision-making stage of policy process so that the problem will be solved (Ogunlana, Yotsinsak and Yisa 2001; Bond *et al.* 2003; Chaisomphob, Sanguanmanasak and Swangjang 2004). Involving local communities and the appropriate management of planning and implementing by the government, natural resources exploitation can be prevented and bring the locals and communities to cooperate with the government (Thabchumpon 2002). It is essential to examine the stakeholder's perspective on the factors contributing to nature conservation in order to understand what policy implementation and the involved parties can do to decrease the degradation.

In 2004, when a tsunami hit the western coast of Thailand, many dead bodies were found along the coast. However, it was also found that survivors who stayed used mangrove forests as shelter to protect them from the giant wave (Ranong Province 2004). It was a noticeable circumstance on mangrove forest along the western coast and raising Thai people's environmental awareness. Nonetheless, awareness of conservation in Thailand is usually raised when some unprecedented disaster occurs. The whole mechanism of government management needs more environmental concern for existing laws and their enforcement.

3.3 Biodiversity Conservation in Thailand

Biodiversity conservation in Thailand was based on the conservation of forests and dates back to the reign of King Rama V. During colonization by Western Europe, the government had to depend on trained European forestry officials on loan from the Forestry Departments of India and Burma in order to plan the administration of its forests. Subordinate staff were mostly Thai nationals. When more trained Thai personnel could be recruited, the number of European staff in management positions was gradually reduced and finally discontinued. This transition took a period of 35 years (RFD 2001).

When the Royal Thai Forestry Department was established in 1896 it was under the charge of the Ministry of the Interior for 25 years. Because of trends and developments in policy and government administration during different periods, the Royal Thai Forestry Department was transferred between two to three ministries before it eventually became a division of Agriculture in 1935m, where it remains to the present (RFD 2001).

However, prior to 1975, Thailand's environment was degraded due to problems of natural resource utilisation and pollution, especially the polluted Mae Klong River, which seriously affected the economy as a whole (Office of National Resources and Environmental Policy and Planning [ONEP] 1999). The government recognised these problems by enacting the first environmental law entitled 'Enhancement and Conservation of National Environmental Quality Act B.E. 2518 in 1975 and establishing the National Environment Board (NEB) with the deputy prime minister as chairman. The Office of NEB, which acted as the secretarial arm to the Board, was also established under the prime minister's office (ONEP 2006).

The 'Enhancement and Conservation of National Environmental Quality Act B.E. 2518 (1975)' was amended twice in 1978 and 1979. Later, supervision of the Office of NEB was transferred to the Ministry of Science, Technology and Energy. In 1992, the government formulated a new 'Enhancement and Conservation of National Environmental Quality Act B.E. 2535 (1992)' to cover environmental tasks at a local and national level, as well as international cooperation. Following this new Act, three environmental organisations, namely, the Office of Environmental Policy and Planning (OEPP), the Pollution Control Department (PCD) and the Department of Environmental Quality Promotion (DEQP) were established to replace the Office of NEB to ensure the effectiveness of policies and implementation of measures, and decentralisation of management and budgeting to local governments in response to government policy. Later, the Ministry of Science, Technology and Energy was renamed the Ministry of Science, Technology and Environment (MOSTE).

However, in 2003, through a government policy of bureaucratic reform, the Government Restructuring Act B.E. 2545 (2002), the 2002 Royal Decree on Transfer of Governmental Agencies' Authority Regarding to the Government Restructuring Act B.E. 2545 (2002) and the 2002 Royal Decree on Legal Amendment Regarding to the 2002 Royal Decree on Transfer of Governmental Agencies' Authority Regarding to the Government Restructuring Act B.E. 2545 (2002) were enacted. Following such legal reform (ONEP 2006), the Ministry of Natural Resources and Environment was established and the OEPP previously established under the MOSTE was transferred on 3 October 2003 to the Ministry of Natural Resources and Environment with a new name, the Office of Natural Resources and Environmental Policy and Planning (ONEP).

The CBD came into force in 1993. Thailand signed the CBD at the UNCED held in June 1992, in Rio de Janeiro, Brazil. The aim of this is to investigate some of the activities and projects on biodiversity conservation undertaken in Thailand. After ratification of the CBD, Thailand would be ready to pursue more effectively its role in achieving conservation and the sustainable use of biodiversity.

Thailand has a long history of local civil participation in conservation, dating back to the work of the Natural History Society of Siam in securing legal protection for rhinoceroses in the 1920s (Royal Forest Department 2003) and including the efforts of the Association for the Conservation of Wildlife in supporting the establishment and expansion of the national protected area system from the 1950s onward (van Dijk, Stuart and Rhodin 2000). A defining moment in the development of the local conservation movement in Thailand was the dispute over the proposed construction of the Nam Choan hydropower dam within Thung Yai Naresuan Wildlife Sanctuary in the early 1980s. This proposal met with opposition from a broad-based coalition of civil society, including local communities, students and academics, environmental NGOs and representatives of the private sector (ONEP 2003). These events are now considered to have given birth to Thailand's "green movement", which has continued to develop and gain momentum since (Carew-Reid 2002), particularly following the re-establishment of civilian rule in 1992.

The National Centre for Genetic Engineering and Biotechnology (BIOTEC) and the National Science and Technology Development Agency (NSTDA) have been actively involved in biodiversity since the early 1990s. The first international forum on "Conservation and Sustainable Use of Tropical Bioresource in Southeast Asia" was organised in Chiangmai in 1993 with support from NEDO/JBA and BIOTEC. This resulted in many collaborative projects (Sriwatanaponse 2000).

Thailand has policies for the conservation and sustainable use of its biological resources. Several laws and regulations are established. The Ministry of Natural Resources and the Environment has launched a soft law, the Prime Minister Office's Regulation on the Conservation and Utilisation of Biodiversity. It is anticipated that this regulation might serve as a means to link to other related laws such as the Plant Variety Protection Act (1994) and the Protection and Promotion of Intellectual Thai Traditional Medicine Act (2000). The Prime Minister Office's Regulation came into force in January 2000 (Biodiversity Centre 2003). Under this regulation, a new autonomous government body, the Thailand Biodiversity Centre (TBC), was established under the umbrella of the NSTDA. There will be a policy board, the National Committee on the Conservation and Utilisation of Biodiversity (NCCUB) which is also linked to the National Committee on Environment (NCE). NCE is chaired by the prime minister and the NCCUB will be chaired by the deputy prime minister who is in charge of the environment. It is anticipated that the organisation will function well in coordinating all public and private agencies, as well as NGOs and local communities.

There are a number of local NGOs active in biodiversity conservation, such as the Asian Elephant Foundation of Thailand, the Bird Conservation Society of Thailand (BCST), the Hornbill Research Foundation, the Seub Nakhasthein Foundation and Wildlife Fund Thailand. Other NGOs address broader environmental agendas, such as air and water quality. The Green World Foundation, for instance, has a programme to promote water-

quality testing by local communities. Yet other NGOs work with local communities on natural resources management and other initiatives, with objectives that potentially overlap with those of biodiversity conservation (CEPF 2007). The capacity of local NGOs is growing in a number of areas, including increasing public awareness, outreach to decision-makers and engaging local stakeholders in conservation at the grassroots level. In addition, local NGOs are supporting networks of community-based organisations, for example, BCST coordinates the Bird Conservation Network of Thailand, a network of 32 local conservation groups.

Thailand is one of the developing countries which is a democratic country that the prime minister is the head of the government. There are 19 ministries and the office of prime minister. The administrative system is mainly centralised, a so-called top-down hierarchy. Tangsuppavatana (2011) indicates that the patron-client system has an influence on the civil servants and the system. In each ministry operates within a hierarchy called the position class system, which goes from class 1 to class 11 (the lowest to highest position). The highest position in each ministry is called the permanent secretary, class 11. There are two ministries involved in biodiversity policy and management: the Ministry of Natural Resources and Environment (MONRE) which separated from MOSTE in 2002, and the Ministry of Science and Technology (MOST).

3.3.1 Thailand's National Parks

The national parks of Thailand offer visitors a great variety of attractions and in addition, contain ecologically, economically and scientifically valuable plants and animals. Most of Thailand's national parks are blessed with natural beauty and historical importance. The geology, landscape and natural beauty of the parks are recognised by visitors, both locally and internationally, and their appearances are self-interpretive. National parks, in the sense of protected areas, play significant roles in maintaining ecological stability and preserving biological diversity. These protected areas also are excellent places for recreation and education. To date, the National Park, Wildlife and Plant Conservation Department (DNP)

has established 103 national parks (Royal Forest Department 2007). Regarding the diversity of species and genetics, Thai academic knowledge of plant and animal species is very limited and consequently is sometimes a drawback in nature and resource management (Royal Forest Department 2006). However, conservation of the species' natural habitats and genetics within the boundaries of a national park throughout the country could give children confidence that some varieties of wild species would be conserved to some degree. In addition, some academic research is ongoing and it is hoped that one day Thailand will be ready and able to efficiently use its nature and biodiversity.

According to the DNP (2007), national parks in Thailand are intersected by biosphere reserves. Management of these national parks is under the control of the DNP. However, the Maesa-Kogma biosphere reserve, for example, encompasses a former project area of the Mae Sa Integrated Watershed and Forest Land Development Project of the Thai Royal Forestry Department, the United Nations Development Programme **(**UNDP**)** and the Kog Ma Watershed Research Station of the Faculty of Forestry, Kasetsart University. It should be noted that the biosphere reserve largely overlays Doi Suthep-Pui National Park (Rerkasem and Rerkasem, 1995).

3.3.2 Biosphere Reserves in Thailand

There are four biosphere reserves in Thailand since the first was designated in 1976. The management and administration of biosphere reserves in Thailand are under the different responsible bodies from the government. The Ministry of Natural Resources and the Environment is responsible for Maesa-Kogma Biosphere Reserve, Ranong Biosphere Reserve and Huay Tak Biosphere Reserve. However, Sakaerat Biosphee Reserve is under the control of the Ministry of Science and Technology. Table 3.1 lists the biosphere reserves in Thailand.

Table 3.1 List of Biosphere Reserve in Thailand

Name	Year Designated	Total Area (hectare)	Location
Sakaerat	1976	82,100	Nakhon Ratchasima
Huay Tak	1977	4,700	Lampang
Maesa-Kogma	1977	42,064	Chiangmai
Ranong	1997	29,936	Ranong

Figure 3.1 Map of Thailand Showing Biosphere Reserves

3.3.3 Problems with the Biodiversity Policy in Thailand

Thailand signed the CBD in 1992 and ratified it in 2004. The first biodiversity action plan was revealed in 1998, however, since then, an economic crisis in 1997 affected the government's budget allocation for environmental issues and, at that time, biodiversity was not yet widely seen as a public concern. MONRE was established in 2002, having separated from the earlier division under the Ministry of Science and Technology. Since then, it has become the main responsible agency for biodiversity. There are local level biodiversity agencies included within the provincial government. The main corresponding agency responsible for national biodiversity is a separate working division under the Office of Natural Resources and Environment Policy and Planning (ONEP 2008). Thailand is rich in biodiversity, but a number of flora and fauna are in danger of extinction. The first Thai biodiversity protection law, The Forest Act, was implemented in 1941, and The Forest Act 1941 (edition 1989) and The Wildlife Preservation and Protection Act 1992 are the main existing laws protecting plants and animals.

However, deforestation, animal smuggling and species loss in Thailand remain major biodiversity problems (ONEP 2007). For example, the pangolin (*Manis javanica*) is one of the species found in north and north-east Thailand which has been classified as endangered by the IUCN in category Endangered A2d+3d+4d (version 3.1) and pangolin are classified as Thai Protected Wild Animals under the 1992 Wild Animals Reservation and Protection Act 1992 (IUCN 2009). Pangolin smuggling is an illegal trade as the animals are believed to be a rare medicine (MONRE 2008).

In Thailand, the implementation of biodiversity policy has not been fully effective because of inadequate laws and regulations (ONEP 2007). A national report by the ONEP (2006) also highlighted failures in the implementation of a biodiversity action plan towards local people. A lack of understanding of the current situation was also illustrated in a number of biodiversity national reports. However, a self-assessment by the ONEP (2008) presented the success of government officials involved in development of the biodiversity process.

3.4 Institutional, Regulatory Framework for Biodiversity Policy in Thailand

In the Thai political context, the government has absolute power and full authorisation to manage and maintain natural resources and the environment (Muanpawong 1999; Jarusombat 2002). There have been a number of changes in Thai society structure that caused by social and environmental issues (Nicro and Apikul 1999), Laws and legislation can help solve this problem effectively and depend upon the enforcement. In previous year, the responsibility for environmental management in Thailand was depended on the government agencies (MONRE 2004). Government organisations controlled all activities related to environmental issues. Citizens had to comply with all the related laws and regulations. Bureekul (2000) pointed out that Thai government slightly paid attention to these issues. According to the laws and regulations on environment and natural resources, the responsibility of the Royal Forestry Department (RFD), under the Ministry of Agriculture, whose main job covered the forest protection and wild animals conservation (Royal Forestry Department 2000). Generally, environmental policy in Thailand needs to be implemented to comply with current regulations. The government also needs to develop more effective authorities of implementing existing environmental laws.

In 1972, after participating in the United Nations Conference on the Human Environment in Stockholm, the government recognised the need for environmental management. Subsequently, the National Environmental Board (NEB) and the Office of the National Environment Board (ONEB), which served as its Secretariat, were established as a central authority to coordinate environmental management (OEPP 1998). These agencies had been established as the Thailand's first government authorities involved directly with environmental issues (Reutergardh and Yen 1997). After that, the process of environmental management later began and the related laws and regulations were formulated. International mainstreaming of environmental issue influenced Thailand environmental laws and regulations emphasising public participation in environmental conservation (Shytov 2003). Thailand's first national environmental quality act, the Enhancement and Conservation of National Environmental Quality Act (NEQA) B.E. 2518 (1975), was enacted in 1975 and

drastically altered the overview on environmental management in Thailand. The prime minister was the NEB chairperson included nine ministers as members.

Established in 1992, the OEPP, the Department of Environmental Quality Promotion and the Pollution Control Department have played important roles in the country's environmental management. Under these authorities, the issue of biodiversity was first identified. According to the CBD, Thailand was preparing the National Biodiversity Action Plan in responsible to further ratification which was done in 2004. Biodiversity policy has been addressed in Thai regulatory framework since the government recognised its importance and capability serving the signatory (OEPP 1997). However, at this early stage, this legal framework was unable to effectively solve biodiversity loss, and public participation in biodiversity policy was not well established (Jarusombat 2002).Whereas actions related to biodiversity was initially promoted to the local level, the local people have yet understood the concept of biodiversity conservation (Tomich *et al.* 2004).

As a result, the concept of biodiversity was officially launched in Thailand, particularly at a national level (King Prajadhipok's Institute, 2007). Thailand's core laws and regulations relating to right of people participation are: the Enhancement and Conservation of National Environmental Quality Act B.E. 2535 (1992), the Constitution of the Kingdom of Thailand B.E. 2540 (1997) and the Official Information Act B.E. 2540 (1997). Besides, the Constitution of the Kingdom of Thailand B.E. 2550 (2007) was recently enforced. Hicken (2007) notes that the weaknesses of the old constitution was improved in the new constitution. The importance of these core laws have been reviewed in this study so that the current Thai context will be understood clearly, including political context in particular which involved with biodiversity policy. The implications and related laws are addressed in the following section.

3.4.1 The Constitution of the Kingdom of Thailand B.E. 2540 (1997)

The constitution has related to role in environmental policy more than previous ones. However, it should be noted that in this constitution mentioned more on people's right and

local communities' participation in environmental management. The Constitution of the Kingdom of Thailand B.E. 2540 (1997) was enacted on 11 October 1997 to set out the principles of the democratic regime of government (Office of the Council of State 1997). Thai political system has been revoluted that its first recognition of people's public participation during drafting process (Jarusombat 2002; Munger 2007). Noticeably, public relations activities were included raising public awareness of the importance of the Constitution as it is so called 'People's Constitution'. Integrating the public's opinions into the drafting process was included through public hearing in the country. There are a number of advantages of this Constitution (Office of the Council of State 1997) that includes local communities into the administrative system and the right to participate in natural resources management and some amendments in the clause of environmental management (Bureekul 2004).

Political reform and public participation was initiated in the 1997 Constitution in order to examine all government power-related activities (Munger 2007). There was a significant change in this Constitution that government became an authority which support environmental management instead of ruling all environmental issues and activities. The details of this information are: natural resources utilisation and biodiversity conservation in accordance with the principle of sustainable development (Papussaro and Tabungam 1999); pollution control affecting public health; public participation (Papussaro and Tabungam, 1999); and the right of access to information (Papussaro and Tabungam 1999; Jarusombat 2002). The basic rights of Thai citizens regarding environmental conservation were included in this Constitution. It could be said that this Constitution's aim is to lessen power of government and increase power to the grassroots. This is a major change in the Thai constitutional record (Muanpawong 1999; Jarusombat 2002; Bureekul 2004). The basic principles are explained in detail below.

First, Section 79 of the Constitution states that the right of the public and local communities to protect and utilise their environment and natural resources. The implication of this section is that the government should support the people and the local community to

contribute in the protection and conservation of the environment, and according to the sustainable development principle, the public and local communities should utilise natural resources and natural biodiversity accordingly (Office of the Council of State 1997). It should be noted that this section has not stated the responsibility of the public and local communities towards natural resources which could lead to more participation in environmental conservation.

Second, the 1997 Constitution addresses engagement of parties. These include local communities, local government and administrations, academics, educational institutes and private sectors to participate in the environmental activities and movements. In section 46 and 56 focus on communities' and individuals' rights to manage and participate in environmental protection and to use natural resources towards local level. It should be noted that the 1997 Constitution: citizens' rights and equal opportunities incorporate in environmental management and biodiversity conservation.

Finally, the 1997 Constitution guarantees the public access to information. The right to gain access to information about the environment and other official information is provided in sections 58 and 59. Section 59 gives the public the right to receive information, an explanation and justifications from state agencies, state enterprise or local government organisations, before permission is given for the operation of any activities which may affect the quality of the environment, health and sanitary conditions, quality of life, or any other material interest concerning individuals or a local community. The public also has an opportunity to express its opinions on such matters in accordance with the public hearing process, as provided by law (Office of the Council of State 1997). Additionally, citizens have a right to express their point of view and an opportunity to participate in the management, maintenance, preservation and exploitation of the environment and natural resources. The public can access information from both state and local government organisations related to the operation of projects or activities that may affect their community (Chaisomphob, Sanguanmanasak and Swangjang 2004).

3.4.2 The Constitution of the Kingdom of Thailand B.E. 2550 (2007)

The 2007 Constitution retains the original essence of the 1997 Constitution and introduces several new provisions which had the potential to advance the state of Thai democracy (Tanchai 2007). For example, the constitution provided for transparent institutions and more checks on executive authority via the creation of several superintendent institutions. Although most of these democratic features were not effectively implemented, the new constitution also carries forward the mandate for local elections and greater decentralisation (Office of the Council of State 2007).

The Constitution of 2007 guarantees the basic right of a person as a member of a community, a local community or traditional community, to manage and handle natural resources and the environment. Section 66 of this constitution provides communities rights based on their traditions, which are the right to conserve or refurbish the customs, local knowledge, good arts and culture of their community, as well as the country, and to participate in the management, maintenance, preservation and exploitation of natural resources, the environment and biological diversity in a reasonable and sustainable manner (Office of the Council of State 2007). However, these core sections of environmental management require detailed regulations in order to implement them. At present, the supporting regulation is yet to be adopted.

Part 10 of the 2007 Constitution sets out the principle of state policies in relation to public participation. Section 87 states that the state should promote public participation: in the determination of policies and plans for economic and social development at both national and local levels; in political decision-making, the planning of economic and social development and the provision of public services; in the scrutiny of the exercise of the state powers; and in supporting the function of civic groups to form networks to be able to express their opinions and propose their demands (Secretariat General of the Administrative Court 2007). Additionally, the government should promote and provide

public education on political development and the democratic regime (Office of the Council of State 2007).

3.4.3 The Enhancement and Conservation of National Environmental Quality Act B.E. 2535 (1992)

This Act has been modified from previous versions [the first version B.E. 2518 (1975), the second version B.E. 2521 (1978) and the third version B.E. 2522 (1979)]. Currently, this fourth version is still in use. The new National Environmental Quality Act (NEQA) was introduced and came into force in June 1992. Its main purpose is to set and follow the environmental policy, plan and standards to protect the environment by providing basic provisions for environmental protection in aspects of natural resources and pollution control (OEPP 1998), as well as aiming to be a comprehensive environmental law incorporating varied aspects of environmental management in Thailand. The NEQA has also incorporated a number of initiatives, in particular the concept of public participation, aiming to implement effective environmental management and regulations (Mallikamarl 1996). More details of these issues are provided below.

The issue of public participation is prominently highlighted in this act (Shytov 2003) and is particularly involved with biodiversity. Sections 6 and 7 state that for the purpose of public participation in issues concerning the enhancement and conservation of national environmental quality, people have the right to be informed and to obtain information from the government authorities (Office of the Council of State 1992). Besides, to encourage public participation in the promotion and conservation of environmental quality, non-governmental organisations (NGOs) shall be entitled to register with the Ministry of Science, Technology and the Environment (MOSTE) for environmental protection and conservation of natural resources in order to comply with the law. According to this act, NGOs are encouraged in their public participation role of supporting better enhancement and conservation of the country's environmental quality (Office of Environmental Policy and Planning 2002).

However, there are some weak points in this statute. First, with respect to section 8 of this act, only registered NGOs are granted rights to formally participate in the decision-making process. Citizens are not able to use their rights as private individuals. Their rights must be used via NGOs. This approach does not work well because the information transmitted to the decision-makers through third parties may be distorted. Additionally, peoples' rights are not defined clearly and do not conform with the current constitution in respect of the right to know, right to access public information, right to monitor and audit the quality of environment, and also the right to ask for public hearings (Muanpawong 1999; Bureekul 2000). Second, the general provisions related to public participation are poorly developed in the rest of this significant act (Shytov 2003). As a result, the practice of implementing policy and public participation has still to be improved (Nicro and Apikul, 1999). It should be noted that government biodiversity organisations should have locals take part as individual to directly and openly express their views so that they could meet their interests and negotiate their preference with the government rather than passing through NGOs. Nevertheless, the cooperation between locals and some politicians has been found fairly poor because the conflict in issue of trespassing restrictions in National Park for residency and utilisation of biodiversity resources (Naewna Politic News 2011).

3.5 Institutional and Administrative System of Thai Government

The institutional administration of the Thai government is top-down or centralised policy. Figure 3.2 presents an overview of administrative system of the Thai government.

Figure 3.3 shows provincial administration through the involvement of local levels of administration, including the Tambon (subdistrict) administrative organisation (SAO) and provincial administrative organisation (PAO).

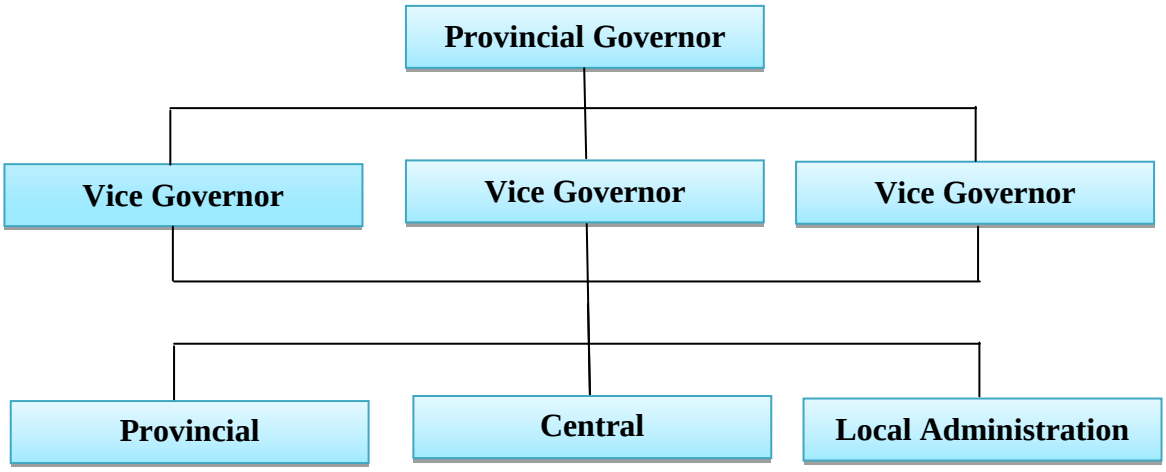

Figure 3.2 Provincial Administration in Thailand

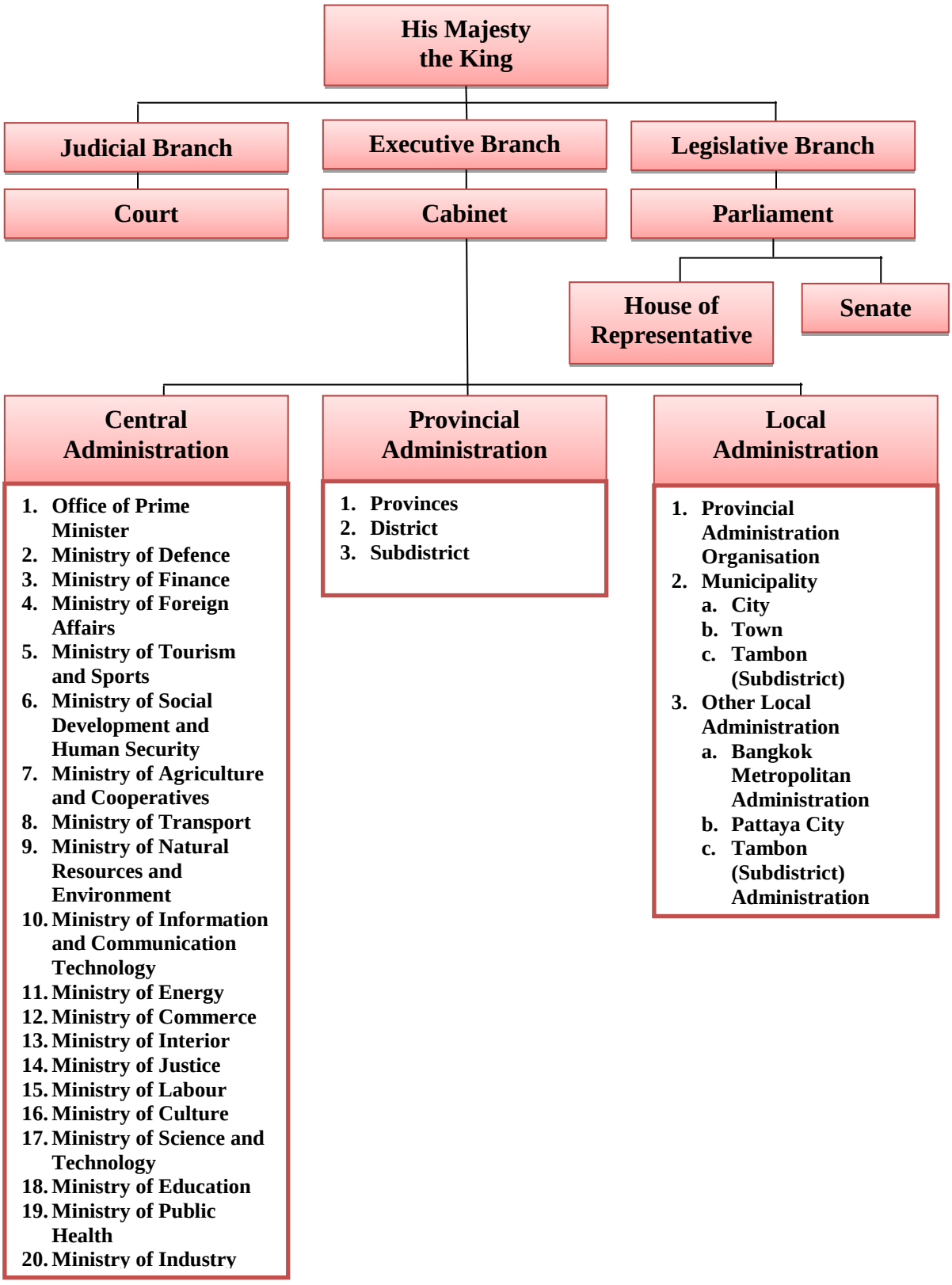

Figure 3.3 Thai Institutional Administration

According to the institutional administration in Thailand, the King is the head of the country under the constitution. The prime minister is the head of the government with the majority of the House of Representatives. The judicial branch has been independent, while ministries, provincial and local level are depended on the cabinet. The changes of the ministers always The administrative system has been upon the member of the parliaments where they were elected. It should be noted that each province has a number of electoral vote based on its population. Therefore, the votes from one district can bring triumph for the politicians and lead them to the parliament. At this stage, the politicians have power to convince the provincial office and the provincial administrative organization to get votes. Once elected, the budget allocation to the province will be relatively different from others (Tangsupvattana 2011). It is also influenced by the Thai patron-client system that the upper class (elite) in one province can easily persuade the locals (subordinate) to vote for one they support. It is called mafia in the electoral vote according to the study of Piriyarangsan (2006) found that the corruption began at local level since the mafia listed the villagers who have rights to vote.

3.6 The Bodies Responsible for Biodiversity Policy in Thailand

The main agencies responsible for biodiversity policy are MONRE, MOST and ONEP. Within MONRE (Figure 3.4), ONEP is the department that plays a key role as the primary national representatives working with the CBD at global level. Besides, ONEP formulates and implements the biodiversity policy at national level cooperating with other relevant departments under MONRE including Department of Forestry (RFD), Department of National Park, wildlife and plant (DNP), Department of and Marine and Coastal Management (DMC), the office of the permanent secretary to MONRE and the DEQP. There are also NGOs and academics institutes involved with the policy.

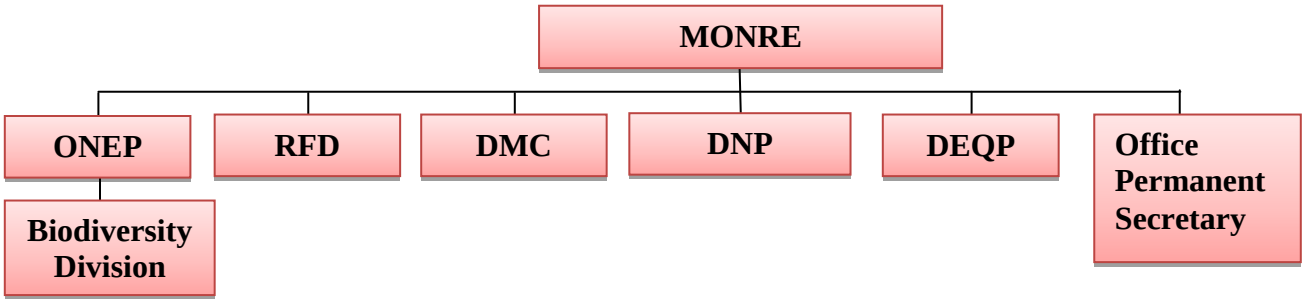

Figure 3.4 Biodiversity-related Organisations Under MONRE

MOST is another ministry involved with biodiversity policy and there are two biodiversity-involved agencies within the ministry (Figure 3.5). The Thailand Institute of Science and Technology Research (TISTR) is a non-profit-making state enterprise whose directed over the Sakaerat Environmental Research Station (Sakaerat Biosphere Reserve) by the administrative line towards Research and Development for Sustainable Development Group and followed by the Environmental Technology and Resources Division. Another agency operating under MOST is the autonomous NSTDA. The NSTDA has a biodiversity-related division, the National Centre for Genetic Engineering and Biotechnology (BIOTEC) which also conducts research into agricultural science, biomedical science and environmental science. An administrative line under BIOTEC and related to biodiversity is the Secretariat for Biodiversity Research and Training (BRT). The BRT runs several lab-

based projects on biodiversity, and also training, support and funding for students and researchers researching Thailand's biodiversity resources (BRT 2011).

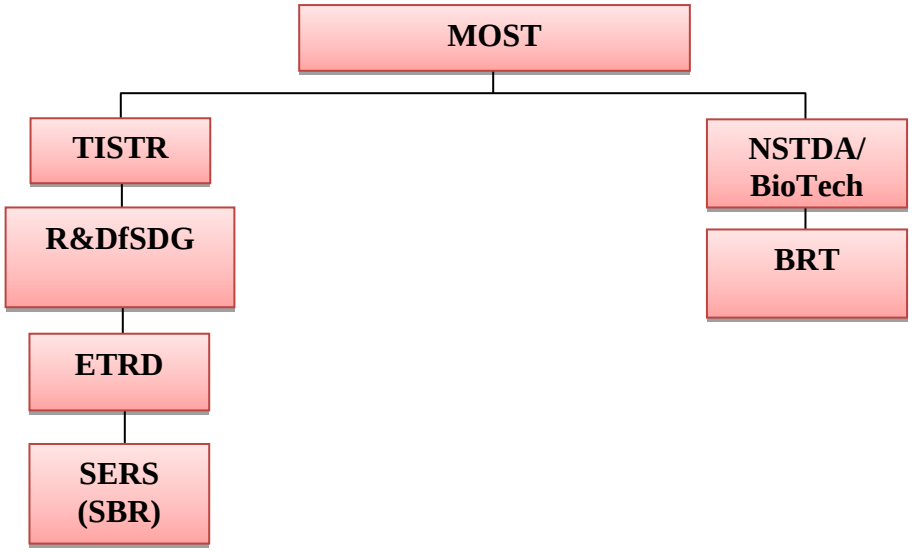

Figure 3.5 Biodiversity-related Organisations Under MOST

According to the biodiversity policy panel, the authorities responsible for biodiversity policy meet annually with the biodiversity panel in order to manage, formulate and revise biodiversity policies. MONRE and MOST cooperation make a contribution to the biodiversity conservation policy at national level. The preliminary prepared policy is forwarded to the parliament in order to be approved. BRI is also an agency involved in the policy. It is, however, supported MONRE and MOST with scientific data and information from the scientists as well as for NSTDA. It should be noted that MOST and NSTDA have more scientists in the laboratories rather than working with the policy or the public (Figure 3.6).

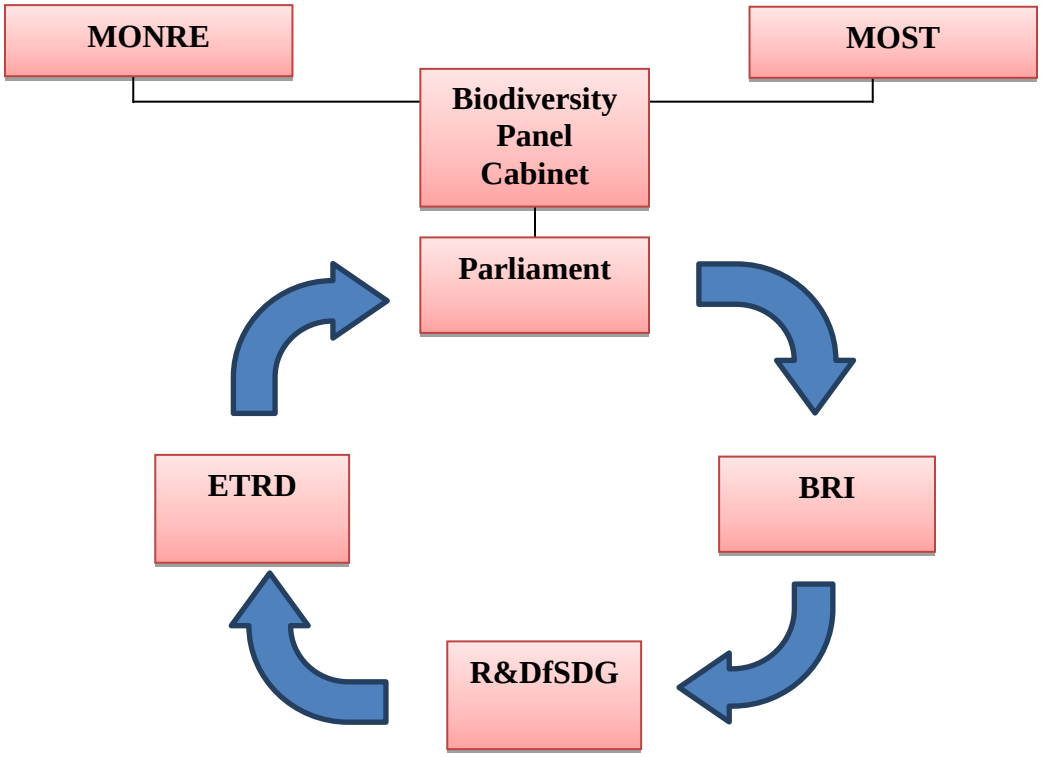

Figure 3.6 Biodiversity Policy Incorporation

The process of developing biodiversity policy includes the ONEP, DNP, RFD, DMC, DEQP and the Office of Permanent Secretary and Botanical Garden Organisation, which are under the control of MONRE. Moreover, TISTR (Sakaerat Biosphere Reserve) and BIOTEC under MOST also work together, along with the National Science Museum (State Enterprise under MOST). Furthermore, the Ministry of Agriculture and Cooperatives also participates in a panel comprising the Department of Livestock, Department of Fishery, Southern Marine Fisheries Research and Development Centre, and Department of Agriculture. Agro-Ecological System Research and Development Institute in Kasetsart University, the Institute of Marine Science in Burapa University. Additionally, a number of NGOs in Thailand include the World Wildlife Fund (Thailand), the Green Planet

Foundation and the Suanluang Rama IX Foundation. These NGOs cooperate with the government as the stakeholders in the policy process and conducting research together.

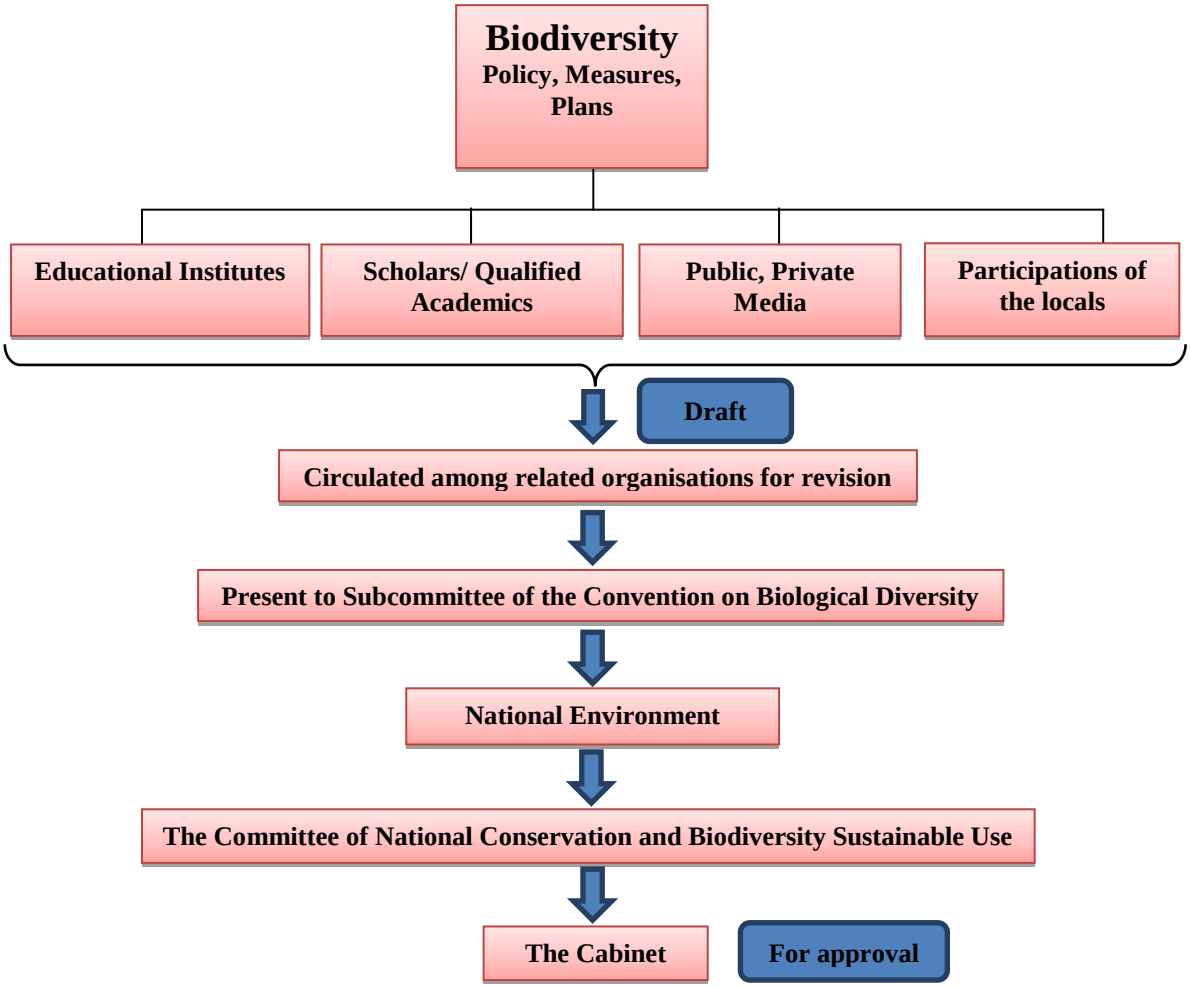

Figure 3.7 Biodiversity Policy Formulation Process

Details of Thai biodiversity policies, measures and plans are approved by the cabinet according to the CBD, Article 6: General Measures for Conservation and Sustainable Use, which required the party to formulate its own policies and strategies. These have been formulated since 1997 before Thailand ratified CBD and the third one has been implemented in 2012, as presented below (Table 3.2).

Table 3.2 Thai Biodiversity Policies, Measures and Plans From 1998–2012

Volume	Date of Approval	Date of Approval by the Cabinet	Key Elements
1. Policies, Measures and Plans of Conservation and Sustainable Use of Biodiversity 1998–2002	Approved by the NEB on 21 January 1997	15 July 1997	Biodiversity conservation policy and plan generated, Solve biodiversity loss problem; incorporate all stakeholders
2. Policies, Measures and Plans of Conservation and Sustainable Use of Biodiversity 2003-2007	Approved by the National Environment Board on 6 December 2001	11 June 2002	Clearing house mechanism; participation of local communities; Research on biodiversity
3. Policies, Measures and Plans of Conservation and Sustainable Use of Biodiversity 2008-2012	Approved by the Committee of Conservation and Sustainable Use of Biodiversity on 14 November 2007	15 January 2008	Inclusive of local community, people and local wisdom in biodiversity policy; Participation of public involved

However, the biodiversity management network is fairly limited to central government as a result of the top-down approach to government. This has resulted in ineffective biodiversity implementation and management (ONEP 2009). It can be indicated that top-down policy does not work effectively without local involvement.

3.7 Summary

This chapter summarises the context of Thai biodiversity policy and administration. It demonstrates Thai Constitutions which link to the right of citizen for biodiversity. It also indicates how biodiversity has been managed under Thai bureaucratic system. The research agencies involved with biodiversity have their own funding mostly within MOST. MONRE plays a key role in biodiversity policy and management as it administers several departments in biodiversity conservation. ONEP is a major agency under MONRE which is responsible for biodiversity policy formulation and implementation at the local cooperating

with local agencies according to the administrative system. The next chapter is the research methodology which links back to Chapter 2 that can investigate on biodiversity policy holistically and systematically. The discussion of how biodiversity in Thailand has been maintained and conserved is resulted and discussed in Chapter 5 and 6.

Chapter 4 Research Methodology

4.1 Introduction

In the previous chapters, literature related to biodiversity conservation, biodiversity hotspots and biosphere reserves, biodiversity policy development and implementation, and the Thai biodiversity policy context, as well as policy evaluation were established. This chapter explains how the research is carried out. Firstly, introduction of the research philosophy is explained together with why it is needed. Secondly, the current research topic, which is related to ontology and epistemology, is explained. A review of the significance of the research is also presented. Thirdly, the conceptual framework is presented and the links between biodiversity conservation, biosphere reserve, biodiversity policy and the Thai biodiversity policy context are given in a diagram. Fourthly, the research method for this study, which is qualitative, is explained and related to the validity and reliability of the research. Finally, primary and secondary data collection methods and the research strategy (interview and case study) are explained including their strengths and limitations, and the scope of this research in terms of validity and reliability.

4.2 Paradigms/Philosophy in Social Science Research

4.2.1 Existing Paradigms

Ontology is the conception of being, what exists and how. Ontology is "concerned with the nature of reality" (Saunders *et al*., 2006, p. 108), or in other words, what is out there to know? For this research, the "what" to be known is the evaluation of biodiversity policy development and implementation in Thailand.

The ontological aspect of this research is that the biodiversity policy linked with the decision-making process and government concerns due to the process can be mapped out

the knowledge from the object in the world, rather than just passive accessing and using them (Kitchin and Tate 2000). There are also some relatively linked between policy and activity that interpretivists would explain as follows: that objects must be understood as human subjects; as objects that human experiences are conscious of; and as objects that humans always intend to use or interact with (Cloke *et al*. 1992).

Epistemology is defined as the "branch of philosophy that asks such questions as how we can know anything with certainty? How is knowledge to be distinguished from belief or opinion? and what methods can yield reliable knowledge?" (Thomas 2004: 36). Likewise, Mathez-stiefel, Boillat and Rist (2007) identify epistemology as the conception of knowing, what is knowledge, what and how we know from nature, society and spirit. Two major epistemological orientations that have dominated debate in the social sciences are positivism (positivist) and interpretivism (interpretivist). The epistemological approach to this research aligns with the interpretivist paradigm by recognising that there are rigorous, valid, checkable and dynamic outcomes. Therefore, it necessary to set up the linkage to obtain understanding by observation, in-depth interviewing and analysis of text, as well as important reflections on the cultural meaning and values of images and metaphors.

4.2.2 Research Paradigms of this Study

The research paradigm which is appropriate to this research is interpretivist. The interpretivist approach postulates that we concentrate upon understanding rather than explaining the world. Its goal is to reconstruct the world of individuals, their actions and the meaning of the phenomena in those worlds to understand individual behaviour, without drawing upon supposed theories (Kitchin and Tate 2000).

An interpretivist approach also advocates the understanding of critics or reliance on the subject to be able to communicate interpretations and meanings, and the ability of the investigator to interpret such communicators. This approach allows linkages between phenomena combined with elements of experiences gathered. The interpretivist fits with the significant beliefs inherent in the research. The philosophy behind this is that policy can be

viewed as real, institutional structures and the development and implementation of biodiversity issues which decision-makers work on its consistently. Whilst initial research suggests that some biodiversity policy needs to meet the needs of humans and the biosphere, some decision-makers and politicians are concerned only with the lower priority of biodiversity in a national situation. It is important to define and justify paradigms for the study in order to conduct this research effectively, the plan, of which three key levels i.e. national, regional and local, needs to be identified and evaluated. The interpretivist approach can justify the biodiversity policy that has been made and also allow us to investigate the current situation involving biodiversity. However, it is equally necessary to obtain a full background of literature and theory to gain detail of biodiversity policy development and implementation, and also to factor in actual sites where fieldwork was conducted.

This research adopts an inductive approach as a result of the belief that it is necessary to obtain full and detailed data which is gained from social interaction and specific phenomena. The project will also utilise multiple methods in order to obtain a further understanding of biodiversity policy upon implementation. Other aspects have been explored through interviews, case study and focus groups. This includes the use of qualitative techniques (unstructured, semi-structured interviews and case studies) to gain superior clear information. Interpretivists emphasise the social, as opposed to economic, view of activities and are concerned with loosening aspects of social life that have not been systematised and institutionalised. This paradigm also points to the identified task in consensual cultural complexities and recognised as value-mediated findings (Elliot and Wattanasuwan, 1998). The utilisation of case studies will, therefore, allow the researcher to identify causal mechanisms, patterns and relationships, and establish whether they are context specific or possible generalisation.

Figure 4.1 explains that this research is mainly empirical and uses rational argument due to the biodiversity policy situation and this is investigated not only in the literature, but also in the fieldwork data collection. This rational argument is explained when biodiversity policies at the national are formulated and then implemented at regional and local levels.

This also adopts empirical data gathering from fieldwork to verify current practice under the actual circumstances

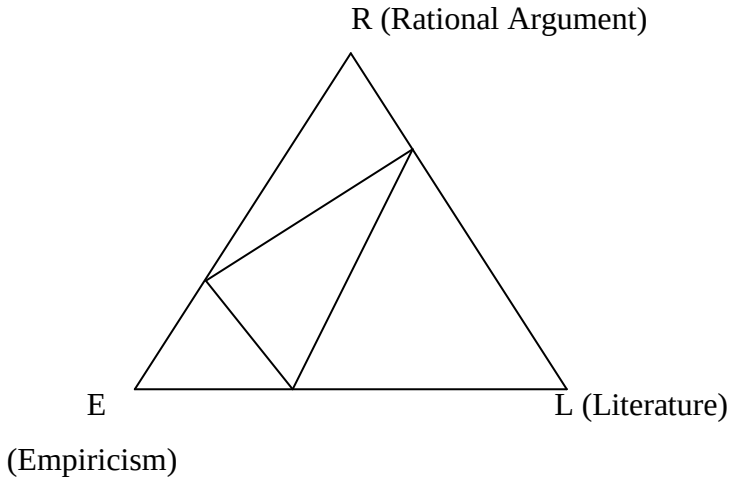

Figure 4.1 The Rational, Empiricism and Literature (REL) Triangle (Eden) Research Philosophy Techniques Adopted for this Study (adapted from Beech 2005)

4.2.3 Research Methodology

4.2.3.1 Qualitative approach

Regarding aspects of validity and reliability, there is the choice of a qualitative or quantitative research approach. A qualitative approach is defined as a naturalistic method that seeks to understand phenomena within context-specific settings (Patton 2001 p. 39). It is found that qualitative data is generally brief, and understood only within context. Collis and Huseey (2009 p. 143) stated that this is associated with an interpretive methodology. As this research examines the circumstances of biodiversity policy, the conceptual framework is drawn by the scope of the biodiversity policy making process and its implementation in Thailand, reflecting the obstacles and challenges faced by Thai biodiversity conservation.

In addition, the qualitative approach relates more to clarification and understanding of similar situations, whereas the quantitative approach seeks causal determination, predication and generalisation of findings (Hoepfl 1997). Since one of the research's objectives is to identify the specific constraints on the development and implementation of biodiversity policy, this research adopts a qualitative approach to clarify and understand the particular circumstances of biodiversity policy of Thailand. In addition, this can help explain the detailed implementation of biodiversity policy towards the regional and local administrative and bureaucratic system involved in biodiversity conservation.

Furthermore, qualitative analysis results in a different type of knowledge compared with quantitative inquiry. Because there is an argument of an underlying philosophical nature, benefit from detailed interviewing and the other focuses on the clear compatibility of the research methods (Glesne and Peshkin 1992: 8). This research employs qualitative analysis which gains advantage from different perspectives and answers the set of research questions by following an inductive approach. Moreover, this can help investigate the characteristics of the decision-making processes involved in policy development in Thailand. In addition, Merriam (1998: 11) states that "the characteristic of qualitative research included the goal of eliciting understanding and meaning, the researcher as primary instrument of data collection and analysis, an inductive orientation to analysis, and finding that are richly descriptive". This study aims to evaluate the effectiveness of biodiversity policy formation and implementation, thus, the research findings and analysis are descriptive and detailed to ensure that these have been analysed and addressed holistically and logically.

Focusing on the context of Thailand, this research aims to study the evaluation of the effectiveness of biodiversity policy formation and its implementation since the country signed the Convention on Biological Diversity (CBD) in 1992 and later ratified it in 2004. This study analyses how biodiversity conservation relate to the Thai authorities, and the impact of Thailand's hierarchical level of administration, which have influenced biodiversity policy development and implementation. This study employs the regional case

studies of three biosphere reserves and their local administrative and bureaucratic perspectives, reflecting the realities of biodiversity conservation. The research addresses the specific obstacles and challenges to biodiversity conservation in Thailand. Finally, this study also develops recommendations for holistic biodiversity policy development and implementation to facilitate future improvements and generate recommendations.

4.2.3.2 Grounded theory

Grounded theory was first developed by Glaser and Strauss (1965; 1967) for qualitative analysis and can be defined as "a qualitative research method that uses a systematic set of procedures to develop and inductively derive grounded theory about phenomenon" (Strauss and Corbin 1990: 24). Similarly, Glaser and Holton (2004) define grounded theory as a set of incorporated abstract hypotheses generated to produce a general theory using large amounts of data on a topic of interest.

The purpose of grounded theory was to organise many ideas from analysis data. Strauss (1967: 22–23) summarises grounded theory as "systematic analysis of documents, interviews notes, or field notes by continually coding and comparing data that produced a 'well-constructed theory'". According to Strauss and Corbin (1998a: 270–272), the following elements should be considered in determining the degree of empirical grounding in a grounded theory study:

• Were concepts generated?
• Are the concepts systematically related?
• Are there many conceptual linkages and are categories well developed? Do categories have conceptual density?
• Is variation built into the theory?
• Are the conditions under which variation can be found built into the study and explained?
• Do the theoretical findings seem significant?
• Finally, can the theory stand the test of time? Does it become part of a discussion and exchange among relevant social and professional groups?

Furthermore, Dey (1999) points out that there is directness in the process in which participants contribute to the collected facts. The advantage of grounded theory is that the study has potential to develop detailed information about a particular phenomenon and be influenced by the context in which the study was undertaken (Laws and Mcleod 2004). However, O'Connor, Netting and Thomas (2008) suggest that when engaging in grounded theory research, clarity is needed regarding which set of paradigmatic assumptions guide the research design. Generally, grounded theory can be useful for developing generalisable theories, and can also aid in gaining deep understanding and meaning, but cannot do both at the same time and within the same research design.

Thus, this study benefits from grounded theory in that the key themes develop primarily and explicitly from the specific context from the fieldwork so that the groups of similar ideas are collectively formed. Nevertheless, the researcher chooses not to use grounded theory to further analyse the holistically explicit circumstances. As a matter of fact, the philosophical nature of this study is interpretivism, and non-systematic data analysis is employed to understand and interpret individual circumstances within the context of Thailand. This research is adopted grounded theory to fundamentally draw key themes from the fieldwork results in order to categorise the same ideas provided by the interviewees. Key themes, drawn using grounded theory, are provided by related sub-themes. According to Chapter 2 the criteria for the evaluation, a set of criteria have been established to evaluate the effectiveness of biodiversity policy implementation in Thailand, and which is related to information gained from the interviews.

4.3 Research Design

The research design, as defined by Robson (2002), is a plan involving conceptualisation of the research, data collection and methodology, findings analysis and discussion, and the final published results. A systematic research design allows the research to attain its established aims and objectives. This research design focuses on the selected research

methodology based on a practical approach related to this study. The research design as a conceptual framework developed for this research is shown in Figure 4.2.

4.3.1 Case Study Design

When engaging qualitative methods to gain perspective and knowledge from personal experience, a case study methodology is a common approach which has been frequently used and is highly appropriate (Stake 2005). This is because a case study has the advantage of effectively observing and analysing phenomena that are not usually accessible by scientific investigation (Abelson 2001).There are a vast number of definitions of case study. For example, case study is explained by Eisenhardt (1989) as

> "*Particularly well suited to new research areas or research areas for which existing theory seems inadequate. This type of work is highly complementary to incremental theory building from normal science research. The former is useful in early stages of research on a topic or when a fresh perspective is needed, whilst the latter is useful in later stages of knowledge*" (Eisenhardt 1989: 548–549).

Similarly, Yin (2003b: 13) defined case study as:

> "*An empirical enquiry that investigates a phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident*".

According to Yin (1981), the distinguishing characteristic of the case study is that it attempts to examine: (a) a contemporary phenomenon in its real-life context, especially when (b) the boundaries between phenomenon and context are not clearly evident. Besides, Shavelson and Townes (2002) suggest that case study is best applied when it addresses either descriptive (what happened?) or explanatory (how or why it happened?) questions and aims to produce a first-hand understanding of people and events. This research is adopted case study to address any specific characteristics which has happened in Thai biodiversity context. Whereas experiments differ from this in that they intentionally split a phenomenon from its context, histories differ from that they are limited to phenomena in

the past where relevant information may be unavailable for interview and relevant events unavailable for direct observation. Compared with other methods, one of the strengths of the case study is its ability to examine, in-depth, a "case" within its "real-life" context (Yin 2004). Therefore, case study is a useful technique to capture actual and broad details from Thai biodiversity in particular.

Besides, case studies were undertaken to gain a detailed view of how biodiversity policy developed and was implemented, as affected by the management of Thai biodiversity. As mentioned earlier in Chapter 3, there are four biosphere reserves in Thailand, located in three different regions: North, Northeast and South. For this research it was decided to select three of the four, one from each of three culturally-diverse different geographical locations and analyse them, but also different in social, economic and cultural perspectives which reflect in different implementation of the policy. According to Edge and Coleman (1986), case studies bring experience to the practice, theories, outside research to accept the action plans of its formulation in actual situations. Similarly, Yin (1981) also pointed that when a case-comparison approach is used, it is inadequate as a particular set of rules for future research. Therefore, the researcher needs to preserve a chain of evidence which is conducted analytically.

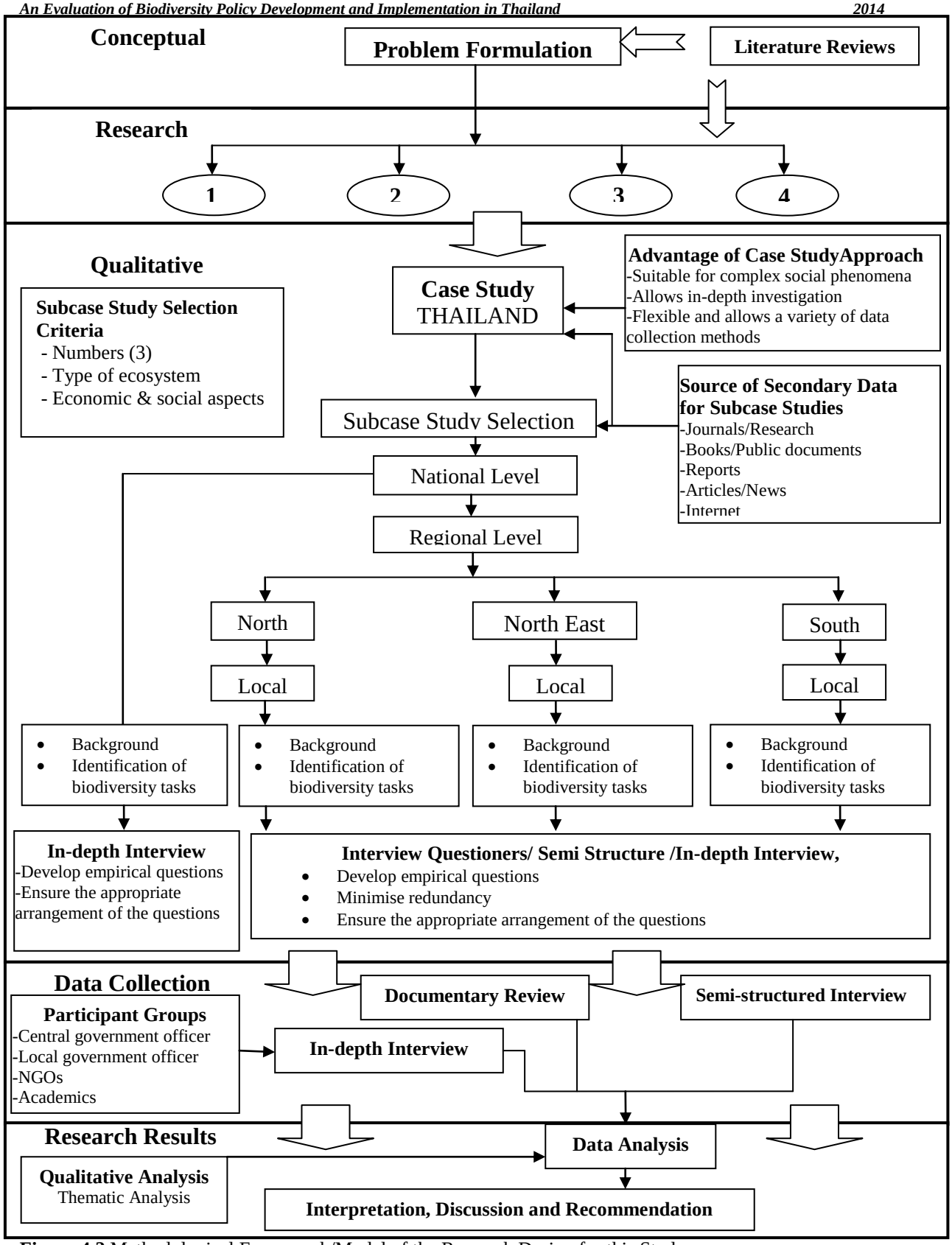

Figure 4.2 Methodological Framework/Model of the Research Design for this Study

It could be implied that case studies are the most appropriate method for this research in order to evaluate the effectiveness of biodiversity policy development and implementation. Nevertheless, there are concerns about how to choose case studies, the number of case studies to be selected and the selection criteria for case studies.

4.3.1.1 Number of Case Studies

The principle aim of this study is to evaluate the effectiveness of biodiversity policy development and implementation in Thailand. Therefore, adopting case studies is the appropriate method in order to examine specific characteristics from empirical data. A case study is an empirical inquiry that Yin (1994: 13) states "investigates a contemporary phenomenon within its real-life context". This technique is predominantly helpful "when the boundaries between the phenomenon and the context are not clearly evident". Accordingly, this study investigates obstacles to the effective development and implementation of the Thai biodiversity policy by benefiting from the real context of the case studies.

The case study is a well-established research technique which focuses on a particular case or a small set of related cases with common features; contextual factors are taken into account (Robson 2002). Following the research on biodiversity policy development and implementation in Thailand, a comparative case study technique was adopted for systematic generalisation where "data gained from a particular study provides theoretical insights which possess a sufficient degree of generality or university to allow their projection to other contexts or situations" (Sim 1998: 350). Hence, the perspectives of Thai biodiversity explored related case studies from three regional biosphere reserves in order to discover explicit features of biodiversity development and implementation in Thailand.

The reason why multiple (three) subcases were adopted rather than a single case can be explained by Yin (2004) that because focusing on a single case may force one to devote

careful attention to that case. However, multiple cases help strengthen the findings from the entire study as replications of each other, deliberate and contrasting comparisons. In addition, the three biosphere reserves chosen (for the case studies) were located differently from each other in terms of administrative structure, economic and sociocultural background. Therefore, none of the cases are considered as controls, which make them suitable for cross-case analysis and comparison. Although all cases are under the same legislations and constitution, the local people from each case are different in terms of influence from political and sociocultural activities as reflected from social and cultural perspectives.

Nevertheless, case study research is not limited to a single source of information and in collecting data for case study, the main idea is to triangulate or establish assembled lines of evidence to make findings as robust as possible and ensure that the most desired convergence occurs (or triangulation achieved) when two or more independent sources all point to the same set of events or facts (Yin 2004). In order to achieve that, the data involved in the case studies was collected from books, journals/articles, biosphere reserves profiles, websites and interviews. Another point which is important to mention here is that the participators who took part in the interviews for the case study were also required to give their views on not only issues concerning their own perspectives, but also Thai biodiversity policy development and implementation more holistically.

4.3.1.2 Research Interviewees

Target group

The researcher started data collection by preparing a list of names of all biodiversity-related organisations in Thailand. The related organisations were acquired from the listed information provided on the Ministry of National Resources and Environment (MONRE) and Ministry of Science and Technology (MOST) websites (www.mnre.go.th and www.most.go.th) in September 2007. Firstly, the researcher began to contact those related organisations directly by sending official letters to the head of each biodiversity

organisation. It took approximately 3–4 months and received a few number of replies and some gave no response at all. Later, the researcher distributed the list of names to various friends and acquaintances who work in the industry to initiate several discrete chains of access. This helped limit the selection bias associated with the use of personal contacts and of the snowball approach in which very few chains of referral are initiated. The members of a single chain sample may share similar and unique characteristics not shared by the wider population (Atkinson and Flint 2001).

The research began with the preparation of the relevant stakeholders involved in biodiversity policy and implementation, listing the organisations from the national to local level. This is in accordance with the roles and responsibilities of the biodiversity-related officials. The researcher distributed the list of names to various groups of involved people who work in the industry in order to initiate access to the data. However, a number of name lists were unavailable through the websites and the researcher had to acquire these through personal contacts and networking. The snowball approach helps to limit selection bias when a single referral is contacted. Hendricks, Blanken and Adriaans (1992) noted that the snowball approach provided practical advantages to qualitative research. Nevertheless, the disadvantages of the snowball approach are that it is time-consuming (Faugier and Sergeant 1997) and there is the sense of "insider knowledge" required for the initiation of contacts (Groger *et al*. 1999).

The network may lead to an overemphasis on cohesiveness in social networks and miss "isolates" that are not connected to any approached network (Atkinson and Flint 2001). Therefore, most snowball samples are biased and not suitable for drawing generalisations. Epistemologically, this research aims to understand the insights of the different actors' perceptions and how they carry out their roles and responsibilities within their particular contexts. The study, in turn, aims to expand and generalise theories, but not to enumerate frequencies. Application of the snowball strategy in this research was used as a method of contact rather than as a method of sampling in any statistical sense. Snowball approach has flaws in gaining data from key informants. However, under the unstable political situation in Thailand, it was found that establishing connections using snowball approach helped

make a network establishment more effective because Thai society is based on a client-patronage relationship system.

As mentioned earlier in Chapter 3, the client-patronage relationship is deeply rooted in bureaucratic system in Thai government due to unique Thai historical and cultural aspects (Tangsupvattana 2011). This can be implied that you must know someone in the system or are introduced by the insiders because the members of the system will not allow any outsiders to get inside the networking unless refer from one of the insiders. It can also be explained as trust within one networking as it reflects socio-cultural norms and routines (Brinkerhoff and Goldsmith Clientelism, Patrimonialism and Democratic Governance: An overview and framework for assessment and programming, USAID, Bethesda 2002). Thus, this study is a qualitative-based research and the snowball approach helped gain access to a limited social network in the area of biodiversity policy with unique characteristics. To make the chain of referral for respondents less time-consuming, contacts were sent the researcher's details so that respondents could understand the standpoint of the research. The chains of networking was established into four chains in order to prevent and minimise any bias from the interviews and make each chain of networking more independent and to data collection for the research.

Nevertheless, as time was limited and there was an experience from pilot study, initial contacts was set up to establish networking coming from more than one chain rather than from one person in order to reduce single network and bias which could come across. The chain of networking began with one of the researchers who works in the industry. This person introduced the researcher to the key informant, interviewee C_{14}, who works in central government and is involved with biodiversity policy. Meanwhile, another respondent initiated networking since there was a discussion with the key informant, interviewee C_1. Interviewee C_1 introduced other key informants, interviewees C_2, C_3, C_4, C_5 and C_6, while interviewee C_{14} established a chain of referral to interviewees C_7, C_8, C_{12} and C_{13}. In addition, the chain networking, interviewee C_{15}, C_{16} and C_{17} were introduced by the members of the university alumni. Finally, another networking chain, interviewees C_9, C_{10} and C_{11}, was initiated by the pilot study.

The relationships between actors at a central level who work in biodiversity have been relatively formal since Thai bureaucracy is defined according to the government. This also reflects a client–patronage relationship system in Thailand that the subordinates are likely to be submissive so that they will gain access or be allowed of any assistance from the chiefs. The different levels of the administrative system reflecting management of the organisations are presented in Table 5.3.3.

According to the regional interviewees, connections with the interviewees in the northern region were established a while ago since most of them are university alumni. Beginning with interviewee N_3, the researcher was introduced to interviewees N_5, N_7, N_9 and N_{10}. Another chain of referral was initiated by one of the researchers in the industry, interviewee N_4. The researcher was then introduced to interviewees N_1, N_2 and N_8. Interviewee N_6 was referred by a university alumnus.

Networking for the north-eastern biosphere reserve began from a researcher in the field, interviewee NE_4. The researcher was then introduced to interviewees NE_1, NE_2, NE_6, NE_7, NE_9 and NE_{10}. The researcher approached interviewee NE_3 following introduction by the researcher's network. Finally, interviewee NE_5 was introduced by the university alumnus and later, interviewee NE_8 was invited to join the network.

Interviewee S_5 was approached by the researcher according to the list of biodiversity-related officials. Soon after that, interviewee S_5 introduced interviewees S_4, S_6, S_8, S_9 and S_{10} to the researcher. While interviewees S_1, S_3 and S_7 had contacts with the researcher during previous fieldwork conducted in the province, the researcher was not related to them earlier. They only worked as collaborators with the local government.

Focus groups were conducted with local residents in the "*Tambon*" (sub-district) within the Tambon administrative responsibility of each biosphere reserve. The researcher approached key informants in each biosphere reserve according to the networking mentioned earlier.

Local residents were selected among themselves by key informants or the headmen of their villages and sub-districts. Each group variedly contained twelve to fifteen locals according to their conveniences and willingness to participate. Fourteen, twelve and fifteen inhabitants from the north, north-east and south, respectively, participated in the focus groups.

Information was gathered from key informants identified using the snowball method, which tended to bring forth the names of heads of villages (headmen) as key informants, because of their familiarity with the forest and biodiversity utilisation. In addition, the seniority system and gender preference in Thailand reflect the selection of leader in the local community (Yoddumnern-Attig 1992). Traditionally, the domain of male household members reflects the fact that males customarily handle interactions with outsiders (Krauss, 1974; Keyes, 1984; Yoddumnern-Attig, 1992; Organisation for Economic Co-operation and Development (OECD) 2011). Female informants also work in some seasons, for example during the harvest, as they share responsibilities with their male partners in a number of activities involving biodiversity utilisation, such as the gathering of herbs and fishery and forest products. During the interviews, several female respondents waited for answers from their (male) head of the family, and in some cases needed permission before they could participate. This represented traditional family relationships and the role between males and females at local community in Thailand; in particular, women depended financially on their husbands (Klasen, Lechtenfeld and Povel, 2011). The snowball technique applied to informants of all villages and was evident in the focus groups.

At all regional levels, characterisations of the relationships between different actors were found as groups of acquaintances as well as informal relationships among officials, non-governmental organisations (NGOs) and academics. Additionally, some of the officials and academics had worked with officials in MONRE before relocating to the regions. Besides, a number of alumni in the north and north-east found that they were working collaborators in the same industry.

It should be noted that superiors' roles reflect how to deal with and manage the policy at the top level, particularly in MONRE and MOST. Moreover, their work is related among other officials in the divisions, departments, the ministry and public and private sectors (NGOs). Nevertheless, relationships between the officials who participated as respondents had begun once their superiors had allowed it to do so. This also depends on the gender, age, educational background and work experience of the superiors in biodiversity policy. This reflected each organisational culture and communication between the civil servants within the hierarchy. It can be argued that cultural difference influences how people behave and decide what and how to act and react. Cultural sensitivity matter should always be taken into account when research is being conducted in different group of communities.

Table 4.1 Table: Overviews of the Interviewees from the Central Government

Case	Overview
C_1	The interviewee gives the perspective of a scientist working in the biodiversity policy context.
C_2	The interviewee reflects official aspects of working with biodiversity policy with an educational background in science.
C_3	This case is an example of a high position in the biodiversity policy-making process with an educational background in science.
C_4	This interviewee represents policy and planning involved directly with biodiversity.
C_5	The interviewee gives the perspective of an environmentalist working as a policy analyst.
C_6	The interviewee is a policy analyst working in environmental management, generally ecology and education.
C_7	This interviewee is a high position official responsible for biodiversity and environmental management with a background in engineering. This person is one of the decision-makers.
C_8	The interviewee has a high level of education with a background in marine science working with coastal management. This person is also an academic.
C_9	This interviewee has a high level of education with a background in forestry. This person is also an academic and NGO.
C_{10}	This interviewee is the head of a division with long experience in forest management and a background in forestry.
C_{11}	The interviewee is the head of a division with a high level of education in biology and is involved with the biodiversity of forests. This person is also an academic.
C_{12}	This interviewee is a policy analyst working in the international perspective of cooperating with environmental programmes.
C_{13}	The interviewee reflects the context of environmental policy maker with an education in science.

C_{14}	This interviewee represents a high level official involved with decision-making process with an education in science. This person also works as an academic.
C_{15}	This case reflects scientists in environmentally related, particularly lab-based, work with a background in science.
C_{16}	The interviewee is a scientist working in the lab and involved in some related projects in biodiversity.
C_{17}	This case reflects a low level official with a background in science who undertakes multipurpose work.

Table 4.2 Overview of the interviewees from the North biosphere reserve

Case	Overview
N_1	This interviewee works as a policy analyst with a background in chemistry.
N_2	This case is an environmentalist working directly with biodiversity and environmental management generally, with a background in sanitary science.
N_3	This is a high level official responsible for watersheds and nature conservation. This person is also an academic.
N_4	The interviewee is involved in provincial level decision-making and works in biodiversity management with a public administration background.
N_5	This case reflects the responsible position of nature conservation body with a background in forestry.
N_6	This interviewee represents the regional authority and is also a local in the area. This person has a background in agriculture science.
N_7	This case reflects the local administrative organisation with responsibility in local villagers and for the management of biodiversity, with a background in political science.
N_8	This interviewee is a responsible official from a provincial administration with a background in public administration.

N_9	This interviewee is an NGO working with nature conservation. This person is also a part-time academic.
N_{10}	This is an academic involved with environmental conservation and biodiversity. This person is also an NGO.

Table 4.3 Overview of the interviewees from the Northeast biosphere reserve

Case	Overview
NE_1	This is a environmental official working from the perspective of the region with a background in science.
NE_2	This interviewee is responsible for nature conservation at a provincial level with a high level of education in forestry.
NE_3	This is an official responsible for the biosphere reserve with a biology background, and a high level of experience in biodiversity.
NE_4	This interviewee is a planner in the province responsible for biodiversity and environmental management with a background in political science.
NE_5	This case is an official responsible for a local region with a background in political science.
NE_6	This case represents regional conservation of a protected area with a background in forestry.
NE_7	This case represents the local administration involved with environmental management with a background in public administration.
NE_8	This is a policy analyst in the province working with environmental conservation and with a background in environmental science.
NE_9	This case reflects an NGO and academic background with experience in provincial environmental management.
NE_{10}	This interviewee is an academic and NGO in the region who is involved with environmental management.

Table 4.4 Overview of the interviewees from the South biosphere reserve

Case	Overview
S_1	This interviewee is the head of a regional office with a background in marine science.
S_2	This interviewee is an official responsible for the biosphere reserve with a background in forestry and a high level of experience in mangrove conservation.
S_3	This interviewee is an official working in mangrove management with a background in forestry.
S_4	This interviewee reflects the main body responsible for biodiversity at the provincial level with a background in environmental management.
S_5	This interviewee is a head of administration in the province with a background in political science, and is responsible for decision-making in the province.
S_6	This is an official with a background in management science, working with the public at the local level.
S_7	This is an official responsible for the protected area in the region with a background in forestry.
S_8	This case is a local administrative official with a public administration education working with environmental issue at the sub-district level.
S_9	This is an official working at the provincial level with responsibility for environmental management in the province, and educated in public administration.
S_{10}	This is an academic and NGO in the region involved with environmental management.

In total, there were forty seven interviewees plus three focus groups from the three regions (one from each). Only six interviewees from central government allowed recording of the interview. The rest provided similar reasons, as the interviews concerned their professional ethics and opportunities. Regarding unrecorded conversations, the transcriptions were

transcribed electronically. Notes were taken during the interviews in order to highlight important points and were later used as the researcher's reminders.

4.3.2 Data Collection Methods

Data that has already been collected for some other purpose is normally known as secondary data. People may think of collecting new data specifically for the research they are doing, and such data is referred to as primary data (Saunders *et al*. 2007).

Secondary data, including qualitative data, is used in both descriptive and explanatory research. There are two types of secondary data: raw data, taken directly from other people's work or that has undergone little processing; and compiled data, which has undergone some form of selection or summarising (Kervin 1999). In terms of research strategy, secondary data is used most frequently as part of a case study, whereas interview techniques are regarded as a useful way of gathering primary data.

4.3.2.1 Literature Reviews

In this study, secondary data was gathered from the literature, publications, academic documents on biodiversity policy development and implementation, including books, journals, government publications, conference documents, practitioner guidebooks and reports. Although publications were fairly easy to access, unpublished reports, internal government documents and studies were difficult to obtain, for example, interim reports from government, non-government and private organisations.

4.3.2.2 Interviews

The interview is a popular method in qualitative approach. There are four broad types of interview technique which can be used in research: structured, semi-structured, unstructured and group interviews (or focus groups) (Patton 1990; Scapens 2004). The

structured interview is the type of method in which "predetermined questions are put to the interviewee in a specific order and the responses are logged. The same process is repeated with a number of other interviewees and the results or findings can be compared with one another, categorised according to specific questions, and aggregated statistically" (Grix 2004: 127). It can be carried out by "face-to-face interviews as well as via e-mail and telephone" (Kumar 1999: 109). This technique is very close to survey questionnaires on which answers to predetermined questions are written in specific sections rather than asked orally. The key aim of structured interviews is to achieve a high degree of standardisation or uniformity. Therefore, there is the simplicity of comparability, in the format of the answers. The drawback is that this technique is inflexible in terms of coping with the unexpected, which may result in missing the opportunity to discover important information (Grix 2004).

According to Grix (2004), the semi-structured interview is a type of method in which the interviewer has in mind a number of questions that do not have to follow any specific, predetermined order and it is suggested that the number of questions for such an interview should be no more than ten in total. However, it is argued that number of questions that are asked in the interview should depend on the time allowed for the interview and the nature of the topic.

In an unstructured interview, the interviewer "has a random list of concepts or loose questions which can convert into spontaneous questions during the interview" (Grix 2004: 128). Yin (1989) and Robson (2002) also mention that interviews are unstructured and qualitative. This technique can be useful at the very beginning of a project, as unstructured sessions can open up avenues of investigation, including informal discussions, and previously unthought-of of topics. Both semi-structured and unstructured interviews are considered as non-standardised and qualitative research (King 2004; Saunders *et al*. 2007). The group interview usually involves the interviewer and a specific group of people who can be categorised according to social–economic class, ethnic background, age, gender and so on (Grix 2004). The interviewer acts as a "moderator or facilitator, and less of an

interviewer" (Puch 2000: 177). This type of interview can also be structured, semi-structured or unstructured. In this case, the idea is more about beginning a dialogue between group members guided by the topic of interest, rather than holding a traditional face-to-face interview (Grix 2004).

An unstructured interview is a qualitative research technique that allows person-to-person discussion and this can lead to increased insight into people's thoughts, feelings and behaviour on important issues. This type of interview is often unstructured and therefore permits the interviewer to encourage the informant (respondent) to talk at length about the topic of interest (McNabb 2010). The unstructured interview uses a flexible interview approach. It aims to ask questions that explain the reasons underlying a problem or practice in a target group (McNabb 2010). The technique can be used to gather ideas and information.

Interviewing has many advantages in data collection. Firstly, it can provide information that is not published elsewhere. Secondly, the interviewee can assist in interpreting complex documents. Moreover, the interviewee can provide further contacts (snowball effect) which allow the interviewer get in touch with important people (Grant 2000; Grix 2004). The lack of standardisation in interviews may lead to concerns about reliability; recalling that reliability refers to whether alternative researchers would reveal similar information (Thorpe 2002). There is concern that bias may arise in interviews. Bias may arise from the interviewer's side, which could be the interviewer attempting to inflict his or her own beliefs on the interview, or the interviewer being unable to gain the trust of the interviewee, or the interviewer is not knowledgeable about the topic. Bias may also arise be from interviewee's side. The interviewee may be sensitive to questions asked during the interview, that they do not wish or are not empowered to discuss. Therefore, the value of information given by interviewees is likely to be very limited or sometimes wrong.

Validity may also be of concern in the circumstance that the interview is not able to cover the entire population. Therefore, the accuracy remains in doubt. However, there are a

number of ways to minimise these issues. The key to a successful interview is careful preparation. Moreover, the interviewer needs to be familiar with the topic, including the research questions, in order that they can obtain the confidence and credibility of the interviewee. The location of the interview may influence the data collected as the interviewer may overcome the noise outside but not always the audio-recorder. In addition, the appearance (e.g. dress, personality) and behaviour (e.g. listening skills, scope to test understanding) of the interviewer can also influence the data implicitly.

Conducting the interview

Within the limited time and budget of this thesis, the researcher chose to adopt interviewing as a means of conducting the investigation because it is a viable method that has been widely adopted by researchers with the same underlying philosophical assumptions (Nowak *et al*. 2003; Roberts *et al*. 2005). Interviews provide the descriptive data essential for qualitative enquiries and allow the researcher to encourage interviewees to relate their own experiences and attitudes that are relevant to the research questions being explored (Walker 1985). This research uses interviews to gain rich and varied data in a less formal setting. There are also the advantages to interviews being used in the research, and Oppenheim (1992) suggests that the interview is really a precursor to a larger data collection, with the interview providing the basis for closed questions. However, interviewing can be a complex social encounter and it is necessary to understand the dynamic of interviewing and the various different interviewing strategies, and be aware of both the strengths and limitations of interviewing (Kitchin and Tate 2000). Furthermore, conducting interviews is important because an interview requires a high level of interpersonal skills such as putting the interviewee at ease, asking questions in an interesting manner, an ability to listen to the responses without upsetting the flow of the conversation and giving support without introducing bias (Oppenheim 1992).

This research adopts the in-depth semi-structured and unstructured interview technique, within which a carefully created broad framework for questioning had been done previously. Participants were allowed to interpret and express the phenomena in their own

way. The in-depth unstructured interviews were conducted in face-to-face meetings with officials from central government whereas the in-depth semi-structured interviews were carried out at regional and local levels. A specific characteristic of Thai government officials is that they prefer to be interviewed alone, rather than sitting among their colleagues. It reflects Thai culture that the patron (government official) would prefer to be a leader rather than being questioned. This most common interview technique has distinct advantages in that it is more personal in nature and it is easier to gauge the interviewee's reaction to a specific topic through their body language and facial expression ((Kitchin and Tate 2000). Likewise, the in-depth unstructured interviews were carried out with key informants in the village where the biosphere reserves are located remotely. These provide better opportunities for interviewees to talk freely and also for the interviewer to gain more key information without disturbing the conservation. However, focus groups were conducted in the three biosphere reserves where local residents were willing to participate in the interviews by selecting themselves through the head of each village.

Interview guide

An interview guide was developed in order to collect viewpoints and feedback from the interviewees. This contains a list of questions and topics consistent with the research questions. It was prepared to gather the background information on the research topic and make sure that issues related to the development and implementation of biodiversity policy in Thailand were covered. In this research, the interview guide aims to evaluate the effectiveness and investigate the specific characteristics of biodiversity policy development and implementation in Thailand. Therefore, the interview guide contained important issues on the topic and relevant resources of policy development and implementation. In addition, the interview guide consisted of specific aspects linked to the interview schedule and help plan for unanticipated circumstances in this research (Patton 2002). The interview guide was originally divided into four main categories: general information, biodiversity-related roles, effectiveness and involvement in decision-making and implementation, and biodiversity effect on the respondents.

Interview process

A pilot study was conducted with the stakeholders in the selected biosphere reserves in order to make sure that they were satisfied with the list of questions. In-depth semi-structured and unstructured interviews were carried out to make sure that the content and aspects for interviewing were included so that the validity and reliability of the interview questions were verified. Interviewees were allowed to add their opinions and attitudes as to whether any aspects related to the research questions should be added or excluded. The list of interview questions was modified following comments from the stakeholders once the pilot study had finished.

As such, in-depth unstructured interviews were undertaken with central government officials, whereas in-depth semi-structured interviews were adopted for use in the regional subcase studies asking the local official and people. The reasons for employing these types of interviews were not only that the researcher had gained access to the data and information intensely but also let the government officials speak freely. This encouraged them to tell their own stories and kept the atmosphere relaxing and the conversation flowing. The questions were asked by the researcher when relevant issues arose. The researcher found that once the conversations were running smoothly more information was revealed. By contrast, the in-depth semi-structured interviews were relatively useful when interviewing regional government officials and local inhabitants. It can be indicated that because the culture allowed the conversation to be less formal and friendlier atmosphere at the regional and local levels. The questions were tested in the pilot study and it was found that it was possible to control the direction of the interviews by using in-depth semi-structured interviews rather than in-depth unstructured interviews. However, the interviewees from the regions understood the questions and were allowed to speak freely. The researcher avoided asking questions directly, particularly central government officials, as this may mislead the conversation and the information received from interviewees may be not entirely accurate.

The interviews were carried out using the interview guide, including the key and important questions to be addressed. Interviewees were able to choose the time and location of the interview for their convenience. Nevertheless, most of the interviewees, who are government officials, preferred to meet at their offices during the daytime. A few interviewees, particularly those in the local residents, requested to meet at their houses. A number of the interviewees requested the list of questions prior to the meeting. The list of questions had been delivered either by e-mail or mail in order that the interviewees would have more time to understand the details and be familiar with the questions. The scheduled time for the interviews ranged from morning to evening because the interviewees' jobs varied.

Regarding the length of the interview, the in-depth unstructured interviews with key informants lasted approximately 60 to 90 minutes, whilst the in-depth semi-structured interviewed lasted between 30 and 45 minutes. This was upon the schedule, which the appointments had been made with the interviewees prior to the meeting and contacted them in advance. Generally, interviews took no longer than 90 minutes and were conducted by the researcher to facilitate understanding of language and so that the need for translation would be lessened. Interviewees' details had been written in each document provided so that each interviewee had a distinctive identification. These included date, place, and beginning and end times for the interviews.

Tape recording and note taking

Tape recording allows the researcher to concentrate on the interviewees and focus on the topic of the interview rather than paying attention to writing down the conversation from the interview (Patton 2002). In this study, interviewees were asked for permission to tape record the interview before it began. However, some interviewees did not give permission to record. These interviews were authorised only to be written down in a notebook. As a result, the authorised interviews were recorded on a tape recorder and later transcribed verbally. Transcriptions were used in the analysis process using grounded theory for

preliminary taken data into similar categories. Moreover, observations were made and photographs taken to form the supplementary data.

Fieldwork description

In this study, fieldwork was conducted from December 2008 to May 2009. The main purpose of the fieldwork was to collect all relevant information about biodiversity policy development and implementation in Thailand, and to use the three biosphere reserves, namely Maesa-Kogma, Sakaerat and Ranong, as case studies. This fieldwork began at the central government, in MONRE and MOST, followed by the regional and local levels, respectively. Interviewees were selected and the interviews were undertaken in the first four months of the study. Additional data, documents and the interviews were conducted in the last two months to obtain more specific information.

4.3.3 Data Analysis

Data analysis is significant to qualitative research and is the most complex challenge (Thorne 2000). Data analysis has been referred to as "*the process of resolving data into its constituent components, to reveal its characteristic elements and structure.*" (Dey 1993: 30). There are a number of different ways to analyse qualitative data, however, there is no predetermined set of formulas or calculations. This will vary depending on the research questions (Huberman and Miles 2002).

The research was dealt with much unstructured data, and in order to analyse the data effectively, content analysis was applied to this study. The researcher decided to use a word processor to assist in data management, although a number of qualitative data analysis softwares (QDAS) are available. The researcher considered using the QDAS but this is time-consuming since it requires selecting appropriate software and becoming familiarised with it. In this study, the interview data was transcribed and encoded to protect the anonymity of the interviewees. The qualitative analysis procedures were adapted from

Glaser and Strauss's (1967) constant comparative method since this study is inductive analysis.

All interviews were conducted in the Thai language which is the native language of the interviewees and the researcher. The advantage of conducting research in the mother tongue is that the interviewer and interviewees can communicate fully and understand each other without any language barriers. The transcriptions were analysed and interpreted in Thai to ensure that the meanings and expressions from the interviews were clearly processed. Although the transcriptions were in the Thai language, the thesis is written in English. Difficulties were rarely found by the researcher since the interviewees had already explained their views clearly and the interview data was easy to understand when transcribed. The researcher adjusted the level of communication to, for example, local people, academics and government officials in order to communicate with them effectively. Some technical terms are translated into the Thai language but are not commonly used, unless among scholars. For example, the term 'biodiversity' was defined as the diversity of plants and animals to the local people whereas government officials and academics preferred to use the neologism and this was widely spoken among them.

Since the research was conducted using multiple case studies, cross-case comparison is necessary due to the requirement to standardise the results (Miles and Huberman 1994). In addition, Weber (1990) stated that qualitative content analysis helped classify the similarity of meanings of the categorised data represented. This study involved a large amount of data, including interview transcriptions. Thus, since grounded theory was adopted in the methodology, the key themes were primarily drawn and identifications of the collected data were related to the analysis.

4.3.3.1 Textual analysis

Textual analysis is useful for researchers in cultural studies, sociology, anthropology and other several fields (Mckee 2003). The use of documentary or textual analysis is widely adopted in case study research (Yin 2002). Since primary data has been collected from the

original source of information, there is a different in using secondary that has been interpreted according to authors publishing (Finnigan 1996). This research adopts textual analysis in order to gain wider information in accordance with both published and unpublished documents and to complement the actual situation from primary data collection which conducted from the fieldwork. As to triangulate with other sources of information, textual analysis has been adopted to fulfill research for better handling of data (Punch 2005). Therefore, the research will be complemented by both primary and secondary data that help identify and analyse the effectiveness in Thai context of biodiversity policy development and implementation.

4.4 Generalisation, Validity and Reliability of the Study

4.4.1 Generalisation

Generalisation of the research is based upon how the research is conducted. Bona (1993: 200) defined generalisation as "the characteristics of research that affect the contextual relevance of findings across measures, methods, persons, settings, and time". Case studies are generalised by the theories which already used as template and considered as analytic generalisation (Rowley 2002).

As this research aims to investigate all perspectives of the development and implementation of biodiversity policy based on the literature review in Chapters 2 and 3. The level of implementation and the effectiveness of biodiversity policy, for instance, were considered to find generalisations and limitations of the study.

4.4.2 Validity and Reliability

In terms of the findings, it is important to evaluate the methodology adopted in terms of validity and reliability. "In discussions of social research, validity and reliability are almost always presented jointly" (Thomas 2006: 185). Validity is defined by Hammersley (1992:

94) as "truth: interpreted as the extent to which an account accurately represents the social phenomena to which it refers". Moreover, there is a suggestion that it is "the extent to which the research findings accurately reflect the phenomena under study" Collis and Hussey (2009: 143).

According to Gill and Johnson (1997: 129), reliability refers to the consistency of results acquired in research. It should be possible for another researcher to repeat the original research using the same subjects and research design under the same conditions. Furthermore, reliability refers to "the absence of differences in the results if the research were repeated" (Collis and Hussey 2009: 143).

The use of validity and reliability are common in qualitative and quantitative research (Golafshani 2003), and both concepts are important. However, depending on the nature of the research, one approach may be required more than the other. While the quantitative approach usually results in findings with a high degree of reliability, the qualitative approach usually results in findings with high degree of validity (Collis and Hussey 2009).

This research pursues a qualitative approach and is particularly interested in evaluating and understanding the actual effects of biodiversity policy development and implementation on Thai biodiversity. Consequently, the research needs data with high validity since it is not about to create or generalise a new theory or assumption, which would often entail highly consistent data.

4.5 Ethical Issues

When conducting research, it is important that ethical issues are taken into account. In this research, the ethical issues were thoroughly addressed during the process of research. Anonymity, confidentiality and informed consent were ensured prior to fieldwork data collection, interviews and presentation of findings.

4.5.1 Anonymity and Confidentiality

It is essential that interviewees' details are kept confidential. Anonymity and confidentiality were important in this research in case information from the interviews was revealed. Interviewees were guaranteed that the data collection and interpretation of the transcription were secure. Code numbers were used for interviewees to keep details confidential and the results of the interviews are presented without identifying any of the interviewees.

In this study, tape recorder and interview transcripts were interpreted without identifying the interviewees. Interviews were recorded only if permission had been given by the interviewees. In addition, the fieldwork notes are kept safe with the researcher and will be destroyed later.

4.5.2 Informed Consent

In this research, informed consent was prepared and approved by the university ethics committee before conducting the data collection. Informed consent was delivered to the interviewees at the time of the interviews. The researcher provided the interviewees with a description of the informed consent and answered all questioned asked by the interviewees. The contents of the consent form used for this research included: the guarantee that all responses would be kept confidential and anonymous, the general subject of the question, the purpose of the study and basic procedures, identification of the researcher, the contact name and address of the researcher. In addition, the interviewees could withdraw at any time during the interview process without any questions from the researcher.

4.6 Limitations of the Research Methodology

There are a number of limitations to this research methodology. Firstly, the case studies in the research represented specific examples of biodiversity policy in Thailand. However, the findings from the case studies are unlikely be generalisable to the perspective of

biodiversity policy elsewhere. Nevertheless, one of the objectives of the research is to develop recommendations for biodiversity policy in Thailand, and although explicit issues from the study concerned only the improvement of Thai biodiversity, they might also apply in other similar situations. As a result of multiple case studies being adopted, systematic research was conducted to present the similarities and differences between them. However, the time allowed for this research was strict as well as the validity and reliability in practical way.

4.7 Summary

This chapter discussed details of the nature of knowledge and the development of that knowledge. According to Saunders *et al*. (2007), knowledge development may not be as dramatic as a new theory of motivation, but even if the research has the relatively modest ambition of answering a specific problem in a particular field, it is, nonetheless, developing new knowledge. The research aims to critically evaluate biodiversity policy development and implementation in Thailand, biodiversity conservation, and Thai biodiversity management. The research has adopted an interpretivist approach after comparing this with a positivist approach. The key differences in these points start from their different conceptions of human beings and how their behaviour can be understood. These conceptions reflect different ontological assumptions about the nature of the world. The interpretivist argues that while positivism may be an appropriate epistemology for the natural world, it is inadequate for understanding the human world. Positivism argues that people and things are sufficiently similar and both should be studied in the same way. They argue for the unity of science, claiming that there is but one way to a scientific understanding of the world. To study humans as social beings it is necessary to adopt a non-positivist orientation. The research also adopted interviews and case studies as research strategies. This explanation strengthens limitations of both methods related to validity and reliability. There is no single perfect research strategy, but the integration of approaches to make it better.

In this study, grounded theory is used to primarily draw key themes from the data collected in the fieldwork so that the data can be placed in the same categories easily. This helps categorise the several types of data, most of which are primary data from interviews, field notes and focus groups. Moreover, grounded theory is better way to explore data within the qualitative approach as the research is focused on biodiversity policy development and implementation, and the nature of the research is interpretivist.

Chapter 5 Results from Thai Biodiversity Policy Investigation

5.1 Introduction

A clear understanding of Thailand's biodiversity policy process against the background of Thailand is an important part of this thesis. This chapter aims to identify and document the characteristics of the decision-making process involved in policy development. Furthermore, it also investigates the specific political and logistical constraints on the effectiveness of Thai biodiversity policy formation by demonstrating perspectives and relevant themes from the research findings and the level of implementation of the case studies.

The chapter consists of four main sections. It begins with an overview of the background to the case study. The second part presents the interviewees' roles and experiences in the biodiversity policy process. The demographic characteristics and interviewees' backgrounds are presented as an essential context to the policy processes. The third part presents an analysis of the situation of the biodiversity policy before and after ratification of the Convention of Biological Diversity (CBD). The final section presents an investigation of the level of biodiversity policy implementation involved in the case study. The research findings are analysed, interpreted, discussed and applied in relation to the theoretical framework of the biodiversity concept mentioned in Chapter 3.

5.2 Background Information About the Case Study: Thailand

5.2.1 Hierarchy of Thai the Administration and Bureaucratic System Involved in Biodiversity Policy and Implementation

After Thailand signed the CBD, a number of policies and plans related to biodiversity were put into place. A biodiversity strategic and action plan was launched in 1998 and the third and current plan lasts from 2007 to 2012.

The first National Biodiversity Strategic and Action Plan (NBSAP) was revealed in 1998. The Thailand Clearing House Mechanism (CHM) was piloted between 1996 and 1998, although the proposal was approved only until 1997 as the first NBSAP was brought into practice. Although the CHM was primarily set up as a bottom-up and decentralised system at a national level, it should be noted that the Thai bureaucratic administration system has an apparently centralised and top-down approach (Thai Bureaucracy 1999).

Furthermore, at the time when CHM was launched, the national focal point for the CBD was the Ministry of Science, Technology (MOSTE) in addition to the first national biodiversity action plan. The Office of Natural Resources and Environmental Policy and Planning (ONEP) under Ministry of Natural Resources and Environment (MONRE) was established in 2002. New divisions and sections have been established to serve MONRE, for example ONEP, DMC and DNP, and the division of Biological Diversity Conservation is one of them.

Although the NBSAP document was enforced from 1998 to 2003, a restructured Thai bureaucratic system was launched in 2002. The body responsible for biodiversity policy changed from MOSTE to the new MONRE. It can be clearly seen that the transfer of the organisation affected CBD implementation due to a lack of bureaucratic operational continuity. Moreover, civil servants from MOSTE were transferred to the newly established MONRE in the restructured bureaucratic system, the modification of the administrative structure and organisational culture differed from the previous office. This was confirmed by two interviewees as follows:

"*I worked in the MOSTE before establishment of the MONRE. It was only a small division, the OEPP, and major attention from the Ministry was not paid to us. Nevertheless, the new ONEP transferred more officials from a few departments, different ministries, so that I had to adjust the way I worked with the colleagues*" (Interviewee C_1).

"*The environmental division there was very small with a few officials working together in the MOSTE. Within the MONRE, I found it a bit unusual since more officials joined us from MOST and the Ministry of Agriculture. The culture of working was relatively changed and I tried to get used to it.*" (Interviewee C_{14}).

It should be noted that once the restructured bureaucratic system was established, the changes are viewed as an unnecessary waste of time and resources. Moreover, the budget was split for the newly established departments while the previous biodiversity-involved agencies had less budget for maintaining their projects.

According to the ONEP report on the first decade of the CBD (CBD, 2003), a national report on the preparation for CBD implementation was required by the CBD secretariat in order to organise the thematic report, and pilot project for biodiversity cooperation.

It should be noted that the *National Reports on the Implementation of the CBD from 1998 until 2009* stated that all projects had been successfully implemented according to the National Policy Strategies and Action Plan of Biodiversity. However, an internal assessment report on CBD implementation pointed out that there are a number of projects and tasks which have not yet been successful (ONEP 2008).

In addition, it should be indicated that as the Thai bureaucratic system is described as a "bureaucratic polity", government officials work within the system and local people respect them as this is the tradition and the norm (Bunyakorn 2007). The tradition and the norm helped protect government officials to work free of investigation by the people.

Nevertheless, since the launch of the Office Information Act (1997) and good governance, government officials working with the CBD have become more transparent in order that civil society is able to investigate and clarify the interaction between government and external organisations. Although the actions of the government officials sometimes are viewed as not transparent, the locals still cannot report to any government state inspectors or auditor to investigate their suspicious actions. The case below presents an opinion of government official towards this act. (Interviewee C_2)

> *"It was quite different than previous period that the Office Information Act was launched. There had been a number of people who were interested in the government's biodiversity project required the information on how we work and administrate the policy. They were academics, NGOs and some groups of student too. In my opinion the laws improve the people's rights, however, we (officials) had to work harder in order to be efficient and effective organisation."*

5.2.2 The Regional Case Studies: The Three Selected Biosphere Reserves

The biosphere reserves selected for the sub-case studies are all under the scope of one biosphere reserve. However, their administration varied due to divided authorities. Each biosphere reserve represents the perspectives of a different ecosystem, sociocultural aspects, institutional, political context and local people engaging in biodiversity conservation. Details of these selected reserves are presented below.

5.2.2.1 The Sakaerat Biosphere Reserve

This was the first biosphere reserve in Thailand, established in 1976. It is located in Nakhonratchasima Province and is surrounded by national parks, for example, Khaoyai National Park, Donglan National Park and Pangsida National Park. The ecosystem is mainly tropical dry or deciduous forest (including monsoon forest) with dry dipterocarp forest characterised by *Shorea obtusa* and *Pentacme suavis*, and dry evergreen forests with *Hopea ferrea* and *H. odorata* (70%); the remaining areas are bamboo, plantation forests and grasslands. (Sakaerat Biosphere Reserve 2007). The reserve is under the administration of Sakaerat research station of the Thailand Institute of Scientific and Technological Research (TISTR). Its main duty is to provide research according to the Man and Biosphere (MAB) programme and conserve the natural habitats in the area.

Local residents in the area are mainly in the agricultural sector, either with or without their own lands. The Udomsap Tambon Administrative Organisation is the main authority at the local level, with Wangnamkheao District administering the communities.

Problems found in the area include illegal hunting, and the smuggling of flora and fauna for example, wild orchid and butterflies (Udomsap Local report 2007). Hunting is not allowed in the reserve area, however, it was found that illegal hunters have occasionally existed in the reserve.

Figure 5.1 Map of Thailand showing selected biosphere reserves study sites (CIA 2005)

5.2.2.2 The Maesa–Kogma Biosphere Reserve

This reserve is located in Chiangmai Province which is in the North of Thailand. It was established in 1977 with designation from the MAB. The ecosystem is mainly tropical dry or deciduous forests with hill evergreen forest, dry dipterocarp forest, mixed deciduous and dry evergreen forest, and pine forest habitats (Rerkasem and Rerkasem 2003).

Local people living in the reserve are mainly of the hill tribe (Hmong) with a few local people from Tambon Suthep. The Suthep Tambon Administrative Organisation is the authority involved with the biosphere reserve with the cooperation with the Royal Project and the Highland Research Development Institute (HRDI 2007).

The problems in this area are primarily an excess of tourists and a change of land use from opium growing to horticulture garden with eco-tourism guesthouse. It should be noted that there are two separate areas of responsibility divided by a watershed. The Royal Forestry Department (RFD) is responsible for the Maesa watershed and another is the Kogma watershed under the supervision of Kasetsart University which uses the research station for the Faculty of Forestry (HRDI, 2007). However, only the office of Suthep-Pui National Park is located in the reserve as the main authority managing the reserve in coordination with other organisations both in Chiangmai Province and the north.

5.2.2.3 The Ranong Biosphere Reserve

The reserve is located in Ranong Province which is in the south of Thailand. This reserve was established in 1997 with the designation from the MAB. The ecosystem is mainly tropical humid forests including mangrove forests with *Avicennia–Sonneratia* mangrove communities dominated by *Avicennia alba*, *A. officinalis* and *Sonneratia alba*, mixed *Rhizophora–Bruguiera–Xylocarpus* mangrove communities dominated by *Rhizophora apiculata*, *R. mucronata*, *Brugeria cylindrica*, *Xylocarpus granatum*, coastal hill forest with *Dipterocarpus* spp., *Anisoptera glabra* and *Shorea* spp., sea grass beds at 2–3 metres depth

with patchy beds of *Enhalus acoroides*, *Halophila ovalis*, *Halodule uninervis* and *Cymodocea serrulata*, agricultural cropland with coconut, shrimp farming, and cashew nut and rubber plantations (UNESCO 1997; Havanond 2001).

People living in the reserve are mainly local fishermen, with a few seamen from nearby islands. The seamen are called 'Morgan' who live by the sea and their livelihood based on marine supply. The Ngao Tambon Administrative Organisation is the authority involved with the biosphere reserve in cooperation with the Ranong Province and the Department of Marine and Coastal Resources (DMCR).

Problems found in the area are primarily excess tourists and a change in land use to shrimp farming as well as holiday resorts because Ranong has several beaches and become more popular for tourists who find it interesting as a stopover for going further south or to spend time in a casino in Burma border (Ranong Provincial Office 2008). The problem of the abuse of natural resources by some Burmese immigrants should be indicated that as the reserve is located near Burma border. The Burmese immigrants use their boats to come to Thai border to catch seafood since the reserve provides abundance of seafood resulted from well-conserved biosphere reserve (Ranong Biosphere Reserve 2008).

5.3 Biodiversity Policy Analysis

An Analysis of the biodiversity policy is important in order to learn practical lessons and understand the procedures of both policy development and implementation. Figure 5.2 presents an overview of the timeline for the main Thai biodiversity policy documents.

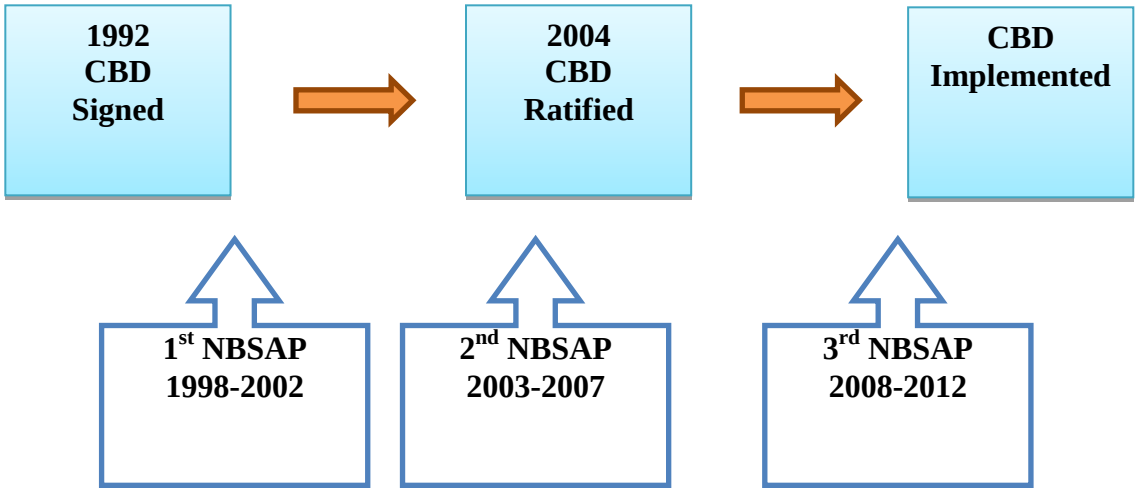

Figure 5.2 Overview of the timeline for the main biodiversity policy documents in Thailand

According to the biodiversity policy implementation timeframe in Thailand, it is mentioned in Chapter 2 that the CBD was not ratified until 2004. However, a few biodiversity policy documents were produced shortly after Thailand signed the CBD in 1992, for example, Thailand's first national policy, strategies and action plan on the Conservation and Sustainable Use of Biological Diversity (1998–2002). This section presents a comparative discussion of the period before and after ratification of the CBD in Thailand.

5.3.1 Biodiversity Policy Development and Implementation Before the CBD Ratification in Thailand (before 2004)

Biodiversity policy development in Thailand began in 1992 when Thailand signed the CBD (OEPP 1992). The National Environment Board launched the National Committee on the CBD one year later. Consequently, the Permanent Secretary of the Ministry of Agriculture and Cooperatives (MOAC) was appointed as the Chair, whereas the secretariat was the Office of Environmental Policy and Planning (OEPP), the Ministry of Science, Technology and Environment (MOSTE).

The first NBSAP was generated by the OEPP, which was under MOSTE at that time. The document was approved by the Thai Cabinet in 1997 for the period 1998–2002 and the

strategies in the first NBSAP focused on public awareness, education and capacity building. The strategies are as follows (ONEP 1998):

Strategy 1: Building the capacity of institutions and their staff on the conservation of biodiversity

Strategy 2: Enhance management efficiency of protected areas to ensure sustainable development protection

Strategy 3: Improve incentives for the conservation of biodiversity at the local level

Strategy 4: Conservation of species, populations, genetics and habitat ecosystems

Strategy 5: Control and monitor processes and activities that threaten biodiversity

Strategy 6: Promote biodiversity management in the environment, traditional lifestyle and culture

Strategy 7: Promote cooperation between international and national agencies/institutions in conservation and the sustainable utilisation of biodiversity

Regarding government policy on bureaucratic reformation, the Government Restructuring Act 2002 was formulated. According to this, the 2002 Royal Decree on the Transfer of Governmental Agencies Authority Regarding to the Government Restructuring Act 2002 and the 2002 Royal Decree on Legal Amendment Regarding to the 2002 Royal Decree on Transfer of Governmental Agencies Authority Regarding to the Government Restructuring Act 2002 were enacted (ONEP 2009). These resulted in the establishment of a new ministry, MONRE. The OEPP was altered to come under MONRE, namely as the Office of

Natural Resources and Environmental Policy and Planning (ONEP) from October 2003 (ONEP 2009).

In addition, the second NBSAP was formulated by the ONEP for the period 2003–2007, including seven strategies. The strategies are as following (ONEP 2003):

> *Strategy 1: Enhance knowledge, understanding and public awareness in the importance and value of biodiversity.*
>
> *Strategy 2: Building the capacity and expertise of institutions and their staff on biodiversity conservation.*
>
> *Strategy 3: Strengthen capacity in conservation, restoration and protection of natural habitats, within and outside the protected areas.*
>
> *Strategy 4: Increase efficiency in the conservation and sustainable use of species and genetic diversity.*
>
> *Strategy 5: Control, regulate, and reduce the threats to biodiversity.*
>
> *Strategy 6: Provide incentives and encourage public participation in the conservation of biodiversity in accordance with traditional Thai cultural practices.*
>
> *Strategy 7: Promote and develop cooperation between international agencies/institutions in the conservation and sustainable utilisation of biodiversity.*

The ONEP Biodiversity National Report (2008) found that achievement and progress from the second NBSAP included the establishment of a biodiversity awareness committee, biodiversity act and national biodiversity framework (ONEP 2008). However, the

conclusion of the CBD operation showed that a number of unsuccessful activities, such as efficiency increasing in the conservation sites project, were among the CBD framework at the national level and implementation of the CBD at the local level (ONEP 2009).

A further section is presented concerning the biodiversity policy after ratification of the CBD. This highlights the specific institutional, political and socio-economic aspects that influenced the policy process.

5.3.2 Biodiversity Policy Development and Implementation after Ratification of the CBD in Thailand (after 2004)

Thailand became the 188th Contracting Party in CBD ratification on 31 October 2003 and this became effective on 29 January 2004 (ONEP, 2004). The MONRE has become the main agency responsible for biodiversity. The Biological Diversity Division, ONEP was named in 2005 as the National Focal Point for the CBD. The main responsibilities are, for instance, cooperating with the Conference of the Parties (COP), the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) and developing the national report.

With the approval of the Thai cabinet, the 2000 Regulation of the Office of the Prime Minister on Conservation and Sustainable Use of Biodiversity was revised. The National Committee on Conservation and Sustainable Use of Biodiversity was restructured and resulted in the appointment of the Biological Diversity Division under ONEP as the secretariat of the Committee (ONEP 2006). The second NBSAP was implemented at the time of ratification of the CBD.

However, on 19 September 2006, a military coup occurred in Thailand, led by Army Commander General Sonthi Boonyaratglin, as the Council for National Security (CNS). Prior his appointment as prime minister, General Surayud Chulanont claimed equal power

with the prime minister. In addition, a new constitution was drafted and which has become the permanent constitution to the present (2013).

This unstable political situation affected the entire Thai bureaucracy and administrative system. Biodiversity policy development and implementation ceased temporarily although the national biodiversity agencies were eager to assist and cooperate in CBD implementation (ONEP 2007). Thus, Thai bureaucracy involving biodiversity remained difficult.

Nevertheless, the military coup ruled until the election was completed and the new prime minister appointed on 29 January 2007, at which point the Thai administrative system returned to a democracy (Office of the Prime Minister 2007). Since the permanent constitution was enacted on 24 August 2007, there have been changes in the government. To date, there have been three prime ministers from different political parties (Office of the Prime Minister 2010)). This political instability has had a considerable impact on biodiversity policy and implementation (ONEP 2008). Table 5.1 presents the political and the biodiversity policy and management situation.

Table 5.1 The chronological situation of Thai politics and biodiversity policy and management

Year	Thai political situation	Biodiversity policy/management situation	Biodiversity agency
1992–1994		Thailand signed the CBD	MOSTE/MOAC
1994–2001	Democratic	NBSAP I (1998–2002)	MOSTE
2002		MONRE established	MONRE/ONEP
2003		NBSAP II (2003–2007)	
2004		The CBD ratification	MONRE/ONEP
2006	Military rule		
2007			
2008		NBSAP III (2008–2012)	MONRE/ONEP
2009	Democratic		
2010		International Year of Biodiversity (CBD)	MONRE/ONEP

Regarding biodiversity policy development and implementation, the third NBSAP (2008–2012) was launched following Thailand's biodiversity management by the ONEP (ONEP 2008). There are only five strategies as follows:

Strategy 1: Protect the components of biodiversity

Strategy 2: Encourage the sustainable use of biodiversity

Strategy 3: Minimise threats to biodiversity

Strategy 4: Promote research, training, education, public awareness and networking on biodiversity

Strategy 5: Strengthen national capacity for implementing biodiversity-related international agreements

Given those strategies, the ONEP has been set a target according to the CBD for the international year of biodiversity in 2010. There have been several on-going projects, activities and events organised by the government, the private sector and non-governmental organisations (NGOs) (ONEP 2008). Examples of biodiversity projects towards achievement of ONEP's goal for 2010 are: a survey of biological status, biodiversity survey and information system, colourful tree plantation, clearing house mechanism (CHM), and a biological boyscout and girl guide project (ONEP 2006).

According to the direction of national development, Thailand's National Economic and Social Development Plan (NESDP) is a 5-year plan which directs the growth and development of the country. At the time when the CBD was ratified, this was during the ninth NESDP (2002–2006), and the eleventh NESDP is currently being enforced between 2012 and 2015.

Table 5.2 Thai government policies associated with biodiversity after the CBD ratification

NESDP	**Cabinet duration (prime minister)**	**Government policy statement**
9th plan	2004 (Thaksin Shinawatra, First term)	• Integrative Biodiversity Management and governance with public participation and indigenous livelihoods
	2005–2006 (Thaksin Shinawatra, Second term)	• Holistic Biodiversity Management; • Sustainability utilisation of biodiversity;
10th plan	2006–2007 (Surayut Chulanont)	• Part of economic policy that balances conservation and sustainable utilisation of biodiversity; • Sustainable economy plus biodiversity management for public participation and governance
10th plan	2008 (Samak Sundaravej)	• Conservation and restoration of biodiversity; •National Biodiversity Database; •Sustainable utilisation with added value, local culture and wisdom, fair benefit allocations; • Knowledge base at a local level with promotion of research and training; • Strategic Environmental Assessment (SEA) for sustainable use and follow the Royal Project
	2008 (Somchai Wongsawat)	• Biodiversity database; public participation at a local level; • Law update and enforcement; • Research and training; • Raising awareness, public relations, local network and cooperation at both a national and international level

NESDP	Cabinet duration (prime minister)	Government policy statement
10th plan	2009 to 2011 (Abhisit Vejjajiva)	•Biodiversity database set up; include indigenous knowledge and local community for biodiversity utilisation ; • Improve natural resource management to raise public conservation awareness through local administrative bodies, the community, the people, the stakeholders through the form of environmental assembly; • Rehabilitate natural resources systematically; Full support the Royal Initiatives projects on natural resources management; • Promote environmental conservation in accordance with sustainable development

Thaksin Shinawatra Government

Ratification of the CBD occurred under Prime Minister Thaksin Shinawatra. He served as prime minister for two consecutive terms (4 years each term), from 2001 to 2006. The second term, however, lasted only from 2005 to 2006 until the military coup took over power and he was ousted from the country. However, the MONRE was established during the administration of the first term of the Shinawatra government in keeping with the ethos of the 9th NESDP strategies that the administration and management of every business segment was the most important issue involved in the political, public, private and civic sector reformation. The 9th NESDP (2002–2006) was enforced at the time of CBD ratification and was the eighth strategic plan followed the NESDP board suggestion. Since the long-term vision of NESDP was stated that human resource is the centre of holistic

development to balance the society, economy and environment, the King's sufficiency economic theory was initiated to lead the way of development.

Regarding the Thaksin I policy statement, holistic biodiversity utilisation was written into the policy statement on natural resources and the environment. There was also the issue of promoting research and training in natural resources and the environment in order to increase Thailand's capacity for environmental conservation and restoration. Standardisation of the Thai environment was also written into policy in order ensure its suitability and fit with international environmental standards concerning national science, economic and social development.

In addition, a number of policy statement sections relate to the biodiversity issue. For example, the section on economic policy mentioned public participation in watershed conservation and restoration; the social policy highlighted promotion of the private sector and local communities to continually maintain and conserve their traditional lifestyle; and the science and technology policy highlighted the promotion of science and technology development to solve economic, social and environmental issues. In addition, the role of the military towards natural resources and the environment is evident in the policy statement.

By contrast, the Thaksin II policy statement had fewer policies than the previous one. Regarding natural resources and the environment, "administration and management" was apparently added under the heading as "policy on natural resources and environment administration and management". The policy stated in a descriptive way of writing comparing to the Thaksin I as the separate points regarding biodiversity management. It was also found that there are some points similar to the Thaksin first term natural resources and environment policy statement. The similarities are: the promotion and restoration of pollution control, participation of the local community and conservation for the development of eco-tourism.

The different points in the Thaksin II policy statement are, for instance, the obvious statement regarding the administration and management of both public and private resources with a balance between the private sector and the local community, as well as bringing geo-informatics, law and regulations improvement and the increased capacity of local administrative organisations into biodiversity management. Moreover, the policy also highlights Royal Initiatives from the King as well as a systematic approach to the sustainable utilisation of biodiversity.

The government policy statements from Thaksin I and II have similarities not only in terms of biodiversity mentioned in the section on natural resources and the environment, but also in other policy sections. These reflect the changes from the first to the second term of the cabinet and reflect the up-to-date situation of the government. MONRE ministers were appointed over time due to alternative policies in each government. There were three MONRE ministers during Thaksin I and II. Accordingly, each minister had their own way operating and these differed depending on the minister's background. This is likely to have affected the bureaucratic system and the policies in the departments and divisions under the MONRE.

Nevertheless, the Thaksin government was overthrown by the CNS. Army Commander General Sonthi Boonyaratglin took control of the government on 19 September 2006. As a result, martial law was enforced in several provinces, including the Bangkok Metropolitan Area. Armed soldiers were sent to guard strategic locations.

It should be noted that when martial law was enforced, government organisations and public areas were under the control of the Army. Activities, projects and movements were limited and a number of actions from the MONRE were affected, for example environmental events, seminars and meetings.

Surayud Chulanond Government

The military coup had come to power during 2006-2007, and Thailand was under the governance of the CNS as the constitution (1997) was abolished. While General Surayud Chulanond was appointed as the 24th prime minister of Thailand, a new constitution was drafted. It should be noted that an interim constitution was enacted. The drafted constitution was enacted after approximately 10 months (from October 2006), a final version of the draft constitution was enforced in August 2007.

The prime minister declared a policy statement regarding the constitution (2007) as well as the current NESDP. The tenth NESDP was launched and implemented while the new government was started. This plan lasts from 2007 to 2011. Prime Minister Surayud Chulanond declared a general policy on national security in order to maintain and resolve the unstable political situation following rioting. The policy statement followed the tenth NESDP aims and objectives to help, restore and develop the country in order to bring about a peaceful and stable community by improving political instability, economic and social development and foreign affairs.

It was found that the government had not mentioned either natural resources or biodiversity issues in the main policy statement. It was also found that issues concerning natural resources, the environment and biodiversity were mentioned in the economic part of the policy instead (Policy Statement of Surayut Chulanond Government 2006).

The changes in MONRE occurred from the minister to the head of division. The minister who was appointed to work in the MONRE once worked as permanent secretary of MOSTE before the administrative system was restructured in 2002. However, the cabinet remained in power until national elections were held in 2008. Samak Sundaravej was then appointed as the next prime minister.

Samak Sundaravej Government

The next prime minister “Samak Sundaravej” (2008) declared a policy statement that clearly involved biodiversity. Not only was biodiversity mentioned in the economic

statement, but it was also featured prominently in the sections on land use, natural resources and the environment, as well as foreign affairs and the global economy.

It should be noted that an urgent policy statement regarding global warming and climate change was made for the first time. The biodiversity issue was written within the section on land use, natural resources and the environment, in contrast to the previous government who included it only in the section on economic issues.

However, the prime minister was in power for only six months as there were protests and he resigned following riots in Bangkok.

Somchai Wongsawat Government

Soon after Samak Sundaravej resigned, a new prime minister, Somchai Wongsawat, was appointed. He became head of the 58th government of Thailand. The cabinet appointed Mrs Anongwan Thepsutin to be the minister of the MONRE. According to her education background, she obtained a degree in education and acted as a teacher in a secondary school, she had no background neither in natural resources nor the environment.

One of the policy statements was written that the preparation of master plan on climate changes and global warming was urgency in the environmental section, as well as the Samak Sundaravej government. However, it was not mentioned clearly about biodiversity issue. The biodiversity issue was included in the part on land use, natural resources and the environment. This is apparently very similar to the previous government policy statement, particularly in the way policy-making was presented.

Prime Minister Somchai Wongsawat was in power from 24 September to 2 December 2008 as a result of a verdict by the constitutional court that there had been election fraud by the deputy chairman of the People's Power Party. The Party was dissolved in December 2008.

Abhisit Vejjajiva Government

After Somchai Wongsawat's resignation, there was a change in Thai politics. Abhisit Vejjajiva was appointed as the latest prime minister. The obvious alteration of the different side of political party was that the head of the opposition, the Democratic Party, became Thailand's youngest prime minister. He soon declared the policy statement and followed the constitution as well as the tenth NESDP. The policy statement and its strategies included with strategic aims and targets. In addition, indicators are also included for each strategy, similar to Thaksin's policy statement.

A few natural resource and environmental issues appeared in the urgent policy statement. Although the main policy was to solve the problem of conflict among the Thai people, an urgent economic policy was stated clearly, as other governments had once done.

In particular, the biodiversity conservation was found in the fifth section on land use and natural resources and the environment. Similar to previous governments, biodiversity conservation was mentioned in the strategy to conserve, restore and preserve the biodiversity using a systematic approach.

However, the last strategy in this section pointed to building and improving the effectiveness of natural resources and environmental management and administration, and raising people's awareness of conservation and environmental utilisation.

5.3.3 Roles of Interviewees and Their Responsibilities in Biodiversity Policy

Table 5.3 Roles and responsibilities of central government officials involved with biodiversity policy

Interviewee	C_1	C_2	C_3	C_4	C_5	C_6	C_7	C_8	C_9	C_{10}	C_{11}	C_{12}	C_{13}	C_{14}	C_{15}	C_{16}	C_{17}
Executive-level role																	
- Biodiversity policy-making and decision-making							✓							✓			
- Defining plan/strategies and implementation							✓							✓	✓	✓	
- Collaborate with other related organisations							✓							✓			
Management-level role																	
- Cooperating with executive staff	✓			✓	✓	✓			✓		✓	✓	✓		✓		
- Biodiversity policy-making	✓			✓	✓	✓			✓		✓	✓					
- Research/training with advice and counselling							✓				✓		✓	✓	✓	✓	✓
Operational-level role																	
- Project operation/ general assistance		✓	✓					✓		✓						✓	✓
- Gather/update information and published documents		✓	✓													✓	✓
- Fieldwork/events organising		✓	✓					✓		✓						✓	✓

The first area of responsibility for biodiversity is at the policy and plan level. Most of the interviewees explicitly mentioned their duty in this area which is to define plan and strategy

implementation. Two of them emphasised biodiversity policy-making and decision-making in particular, as well as collaborating with other related organisations. Interviewees C_7 and C_{14} did not explicitly mention collaboration with other related organisations. Another role perceived by the interviewees is at the management level. Nine of seventeen interviewees directly mentioned that the biodiversity role involves cooperating with executive staff and/or working on the biodiversity policy-making process.

It should be noted that although interviewees mentioned cooperating with executive staff and working on biodiversity policy-making as their practical roles, their behaviour in providing information at the policy and plan level in practice will be discussed further.

Moreover, although some of the interviewees did not clearly mention research, training and advice and counselling, or working on the biodiversity policy-making process as some the roles of biodiversity policy and management, other behaviours mentioned in the interviews could be categorised as additional roles. The last group, the operational level, is represented by six interviewees in two roles in project operation and/or general assistance and fieldwork and/or event organising. Interviewees C_2 and C_{10} emphasised that fieldwork/event organising roles are included on the list only to provide more ground staff for urgent fieldwork or events.

Executive level

Although the interviewees share the same ideal role of working on biodiversity policy and management, evidence suggests that most of the interviewees specifically emphasised defining plan/strategies and implementation. They felt that they were the representatives of the executive staff or part of them, at least, they were aware of the fact that the executive staff could give them additional tasks and they were responsible to the executive staff. Here are some of their comments about their primary duties and the importance of biodiversity policy and management:

> "*We work on biodiversity in terms of policy, plan, strategy and project to which the central government policy leads us.*" (Interviewee C_7)

> "*You have to make sure that each task you are working on provides the most efficient and effective result for biodiversity conservation and be aware of negative outcomes for the public.*" (Interviewee C_{14})

> "*Biodiversity is important to everyone. The starting point is that the government attempt to protect and use biodiversity wisely. We take part as one of the biodiversity-related organisations and we are doing our best.*" (Interviewee C_{15})

The interviewees emphasised their responsibilities to provide their job enhancement on biodiversity policy and implementation career can be explained by the phenomenon of working attitudes and specific Thai government officials' structures in Thai bureaucracy.

Such working attitudes create an organisational problem between executive and lower-positioned staff. Likewise a clash between superiors and minions generally exists within the modern Thai government where divisions were recently restructured. Organisations with different structures have differences in their operational culture and the approaches of their officials.

Given the influence of Thai superiors controlling their minions as discussed earlier, it is highly likely that superiors who have been at the higher position for long would understand the lower-position staff less than those in medium–high position. The relationship between both management and operational-level staff were slightly top-down because they represent a substantial part of the organisation and this reflects the client–patronage system in Thai society.

Management level

In addition to roles at the policy level, management has another important role working on biodiversity policy and management in central government. Most interviewees stated that their roles involved cooperation with executive staff and explicitly mentioned that they followed orders from staff in higher positions. This implies a hierarchy in the administrative organisation which still depended on superiors. In addition, interviewees also worked on biodiversity policy-making and prepare the draft biodiversity policies and information required by their superiors. Below are some comments from the interviewees confirming their roles:

> "*When my boss assigns a task, I have to react as if I was ready and am well aware that the task might be different from my current role … umm … it is about the annual assessment which affects everyone. I still want to work here. Who knows when my boss would offer me a better salary and I may be lucky enough at the end of the year?*" (Interviewee C_5)

> "*I have been working on environmental policy development and implementation by producing manuscripts, interim reports and internal reports. Once I was assigned a new task on biodiversity which made me uncomfortable because it is not my main responsibility. Finally, it was done and I felt relieved that my boss gave me a big compliment and I got promoted at the annual assessment.*" (Interviewee C_{12})

However, one interviewee recounted his responsibility, which included three roles at the management level, although he was a head of division. This reflects the Thai bureaucratic system, which occurred occasionally among Thai officials. It also demonstrates a lack of staff in Thai government. Case K's comments illustrate this:

> "*Since I got promoted to be the head of division, I cooperate more with higher position staff. Previously I was not ready to work at the policy-related level. I*

> *need to adjust myself to gain knowledge of biodiversity policy-making and implementation as well as being trained to give a speech as a biodiversity specialised instructor for research and events.*" (Interviewee C_{11})

This case reflects job overload in his career and it should be noted that the responsibility and job description, in fact, are not compatible as long as the superiors require more support from the subordinate. In Thai society the seniority system has also influenced the way of polite response to say 'yes' rather than 'no'. It is likely to be a patron-client way of governing in the organisations because the chiefs likely prefer the obedient lower-position staff to serve their career.

Operational level

The operational role is another level in biodiversity policy and management. The interview data reflect interviewees' roles and responsibilities as involved with biodiversity tasks. The following interviewees give their perceptions of their duties:

> "*I have been working as a scientist. However, this job allocates me time to spend working as general assistant. Not only do I go for the fieldwork and data collection, but I also spend time working on project operation when time allows. Those contain loads of work and are time consuming. I hope to find a more interesting job than this.*" (Interviewee C_{10})

> "*I am a scientist who works on biodiversity policy documents as well as organising fieldwork and events. Sometime I questioned whether this is my job, spending time on policy-related tasks. I think I get used to and in fact, I would prefer to work in the lab or be fieldwork-based which would suit me most.*" (Interviewee C_2)

Most of the officials at the operation level claimed that there is too much work and that they are not able to meet the deadlines. This is illustrated below:

"*The deadline of every project was similar or the same so I could not make it. Although there were quite enough temporary employees, but they could not be organised efficiently with other officials. I stayed quite late more often when the projects deadline stated.*" (Interviewee C_{16})

5.4 Level of Biodiversity Policy Implementation

Biodiversity policy implementation in Thailand passed through the national level based on the Thai administrative system, which is based on a top-down approach. Implementation at the regional level is key to implementation at the local level. This research was conducted in three different regions which reflected different ecosystems of the biosphere reserve in each region. Moreover, regional and local bureaucracy, management and local residents are also significant in bringing biodiversity policy into practice.

The three selected biosphere reserves are Sakaerat, which is the first established reserve located in the northeast, followed by Maesa-Kogma in the north and Ranong in the south respectively. The results are given below.

5.4.1 The Northeast Region: Sakaerat Biosphere Reserve (Nakhon Ratchasima Province)

Table 5.4 The Interviewees from the northeast

Interviewee / ***Roles and Responsibilities***	NE_1	NE_2	NE_3	NE_4	NE_5	NE_6	NE_7	NE_8	NE_9	NE_{10}
Management-level role										
- Cooperating with executive staff	✓	✓	✓	✓	✓	✓		✓	✓	
- Biodiversity policy-making		✓		✓	✓		✓			
- Research/training with advice and counselling	✓		✓	✓		✓	✓		✓	✓
Operational-level role										
- Project operation/ general assistance	✓	✓	✓		✓	✓	✓	✓	✓	✓
- Gather/update information and published documents	✓	✓	✓	✓	✓	✓	✓	✓		✓
- Fieldwork/events organising		✓	✓		✓	✓	✓	✓	✓	✓

The fieldwork was conducted in the Sakaerat Biosphere Reserve as shown in Table 5.4. The focus group was conducted in Udomsap Tambon and the results are presented as relevant key themes.

Table 5.5 Themes and subthemes drawn from Sakaerat Biosphere Reserve

Theme	**Sub-theme**
Bureaucracy	Policy: bureaucratic orders from the top
Budget	Inadequate budget: discontinuous budget allocation
Attitude of government officials	Less concern on biodiversity : potential to request a biodiversity project
Local residents	Less concern on biodiversity
Land use	Change in land use to be eco-tourism resorts
Research and training	No support from government
Communication and understanding	Terminology of "biodiversity"

The key themes drawn out by the interviews can be categorised and the sub-themes grouped as follows:

• *Bureaucracy*

-Policy implementation

Biodiversity policy is received from central government in a top-down approach. The governor is the head of province and follows current biodiversity policy from the national level. The governor works among the different bodies responsible for biodiversity. The Office of Natural Resources and Environment Nakhon Ratchasima (NRENR) is the main

organisation directed by MONRE to work on biodiversity in the province. In addition, a collaboration of the Protected Area Regional Office (PARO 7), the Regional Environmental Office (Nakhon Ratchasima– REO11), Wangnamkheo district, Udomsap Tambon Administrative Organisation (TAO) and Sakaerat Environmental Research Station also assists and attempts to protect the biosphere reserve and national parks in the province.

However, it should be noted that Sakaerat Biosphere Reserve is under the responsibility of MOST because this site has been established as an environmental research station since 1967, before establishment of the Sakaerat Biosphere Reserve (MOST, 2007). A member of the bureaucracy responsible for the reserve stated that:

> "*The reserve is under the MOST and mainly promotes research and training. It could happen that a restructured bureaucracy would change the reserve under other authority. Who knows what will happen? The more often a change of cabinet, the more the change in bureaucracy.*" (Interviewee N_3)

On the other hand, there has been a slight addition to MOST's proposal recently due to an increase in promoting the area as a site for eco-tourism. The Sakaerat Biosphere Reserve has become more popular with Thai tourists and has been developed as an eco-tourism spot. High-positioned superiors from MOST visited the area and suggested that the site should be a new scientific nature park for sightseeing since it is located between two national parks with several types of plants and animals.

Fortunately, the head of the Sakaerat Environmental Research Station is eager to protect the area by setting up strict rules for visitors to the reserve. He also convinced his superiors to regard the site as a nature reserve and leave it as it is. To date, he has been working at the site for eight years and has faced pressure to provide more comfortable and convenient place for eco-tourism from bureaucracy and local administrative institutions, as well as the local mafia.

The local mafia is a group of local people who benefit illegally from the reserve and also some outsiders. Because of the high diversity of wild plant and animals in the reserve, these people have attempted to obtain access to the core of the reserve in order to hunt wildlife. An example of plant and animal smuggling is that of butterflies, wild orchids and pheasants. The reason for the increase in smuggling is the trend for wildlife collecting by the rich. This is explained by a quotation from one interviewee:

> "*There were two kinds of mafia here in the area. First, they were the local people living here and hunting was their job. They hunted to sell animal skins, wild plants and some endangered animals. I had problem with them rather often if I found that they attempted to hunt in the reserve area. The police did not do their jobs well because they were members of the mafia's family. Another type was the owners of the resorts nearby the reserve. I would say that most of them were from Bangkok or other provinces. They came here and hunted as a hobby. My colleague found them in the core zone and tried to warn them nicely. But they said that they were not afraid of anyone because they knew people in high positions in the ministries. They also claimed that they were the friends or family of politicians. I tried to catch these people but it was difficult to proceed because law enforcement was ineffective here.*" (Interviewee NE_3)

It should be noted that the client-patronage system has rooted in Thailand and influenced the attitudes of local people from the capital city and up country variably. Moreover, the cronyism has also influenced not only at the local level as in this case represented by the local mafia, but at the top level it has shown in crony politics that follow the politicians' preferences on how to solve the problem of biodiversity conservation in Thailand. It could be said that the politicians spread their power from top level to the bottom level respectively.

As a result, limitations on the number of tourists, the proposal for a science park and eco-tourism have been strictly implemented in the site. Moreover, the reserve is provided for scientists and researchers, as well as interested students as the influences of the politicians.

•*Budget*

The budget received by the Sakaerat Biosphere Reserve comes from MOST for research and maintenance. Regarding the budget allocation for the biosphere reserve, recently the budget allowance for the reserve has been insufficient in that the reserve is partly supported by external funding. An interviewee explained as follows:

> "*The reserve or the research station has been partially self-supported in that the allowance from the government budget has not been quite enough to maintain the reserve. We have tried our best to manage our tight budget, in fact, we really need more support and the government would not listen what we have asked for and been doing, at least since I started to work here. Furthermore, the connections which I have established with several researchers and scientists help the reserve carry on and hire more people to work with us, particularly local people. This could help protect biodiversity at a local level in my opinion.*" (Interviewee NE_3)

In addition, external sources of funding also support the biosphere reserve. The Danish Research NGO, Japanese Research and Environment NGO and the ASEAN biodiversity are examples of this. With international sources of funding, tasks and projects have been successfully finished.

> "*The funding to the reserve is from the non-government organisations. The priority of the reserve was not as high as engineering and computing sections in the MOST. The MONRE was not responsible for the reserve but practically speaking they worked together at the policy level.*" (Interviewee NE_2)

Furthermore, the discontinuous budget allocation affects the biosphere reserve. The reserve had been contacted through the Nakhon Ratchasima province to extend biodiversity conservation locally with the locals, but the proposal was rejected and the reserve has been maintained mainly through external funding. This is explained below:

> "*I had no idea how the reserve maintained themselves from the budget of MOST. As far as I knew, the head of the reserve had very good connections with international sources of funding. The expenses in the reserve took quite a large amount of money to look after the employees and the buildings including the scientific instruments.*" (Interviewee NE_6)

It is quite difficult to maintain the budget allocation of the reserve in accordance with a decreasing budget from the government. Nevertheless, funding from international sources maintained the reserve. The office head was able to help with connections with NGOs or global organisations. Moreover, cooperation from relevant biodiversity-related organisations and local authorities in the province, particularly the Wangnamkheo district, help the conservation movement in the area to continue.

• *Attitudes of government officials*

- The government official in the area is one of the key aspects that influence biodiversity conservation. According to recent MOST and MONRE strategies, projects and tasks regarding climate change have been recently employed and as a result, there has been less concern on biodiversity. The trend in biodiversity has changed greatly since the government's target on climate change. This has been regulated and is a matter that the reserve and the provincial government, as well as the local administration in the area, have to pursue.

However, the trend of financial funding to request for the biodiversity project has considerably declined. A local biodiversity proposal is not convincing at the national level and it seems that the government would prefer projects related to business or tourism more

than conservation. The provincial government also follows the national government since the income from tourism has made the province an attractive place, regardless of conservation. It could be implied that government officials would rather accept business projects to increase income in the local area income than protect biodiversity for future generations.

One example is that there is a project to construct a new motorway through the two national parks. This was skipped by the law of mandatory Environmental Impact Assessment and the EIA has not been taken into account at a national level. Therefore, it is likely to approve the construction of the highway by the government. The quotation below illustrates this:

> "*I found the news about the new highway project to be approved by the EIA. How could this happen? The proposed highway was through the three national parks and of course, the reserve will be affected. The cabinet and politicians wanted money from the businessmen. The local people were never involved in the decision-making process. The local officials would never pay attention to this as long as they were being bribed.*" (Interviewee NE_5)

Although many have protested against the project because the forest and wildlife will be seriously affected, the government has been convincing communities that the project will bring opportunities to locals. The option which has been chosen for the wildlife is that there will be a tunnel constructed so that animals can walk through to another part of the forest (Department of Highways, 2009). The outcome of the project will surely affect the Sakaerat Biosphere Reserve since the whole area is part of the same ecosystem.

•*Local residents*

Local residents live close to the reserve can be divided in two groups. One group is made up of local people who have an influence in the area. Conflict sometimes appears in villages between those with different attitudes to the idea of conservation. The mainstream idea is that the economy should be the first priority and businessmen from the capital would

invest in local business. Locals have seen changes ranging from being hired by tourist hotels and resorts to hunting wild animals as well as smuggling wild plants. The problems which appear are quite often in the buffer and transition zones. Wild animal hunting is a crucial issue and the reserve hires locals as rangers to combat this but there are not enough to protect the whole area. Actual experiences are presented below:

> "*I work with the resort in this district and earn money from the boss who is from Bangkok. I find it very convenient having wider road through the district as it brings more visitors to the area. However, I would not like to see rapid changes in the area as a result of developments for tourism. Only a few people would prefer to be working in agriculture, while young generations would like to earn money in an easier way. For example, working in the resorts or hotels allows them to dress nicely and they feel better instead of being farmers with a low and unstable income.*" (Focus group NE)

> "*Outsiders have become insiders as a result of the resort's investments in the district. Previously the lands in the district are subject only to Agricultural Land Reform to help locals have their own space to live their lives doing agriculture. However, although these lands cannot lawfully be sold, some lands have been changed to build resorts and hotels. A number of real owners have become yuppies by selling to investors or business people.*" (Interviewee NE_5)

Another thing to mention is the issue of Agricultural Land Reform in the district. Changes in the area have apparently been noticed. Agricultural Land Reform aims to provide lands to locals who have no own land of their own and are considering agriculture. However, the trend of building resorts spread a few years ago to the district because it is located near the first national park in Thailand. The area surrounded by the first national park is occupied by the Thai upper class. This is because the upper class favour to own villas or private vacation resorts.

•*Research and training*

Research and training in the reserve has received little support from the government. Not surprisingly, MOST strategies are mostly for science, engineering and technology. The reserve's colleagues are mostly locals. The head of the reserve helps to get them jobs in the reserve by training them in basic biodiversity conservation. As a consequence there are more locals coming to take part. This can be explained as follows:

> "*We propose the nature conservation campaigns to the locals and visitors which are varied. All who are interested can join us choosing from either staying overnight or for only ad-hoc campaigns. There are a number of campaigns, for instance, backyard vegetable growing, offering cheap young sprouts to take home. In addition, local communities utilising the transition zone joined us for a while learning to preserve the biodiversity.*" (Interviewee NE_3)

> "*The reserve has offered many useful activities to the locals. Since I was appointed, I have seen and joined it myself learning about biodiversity conservation. The variety of activities provides a relaxing atmosphere and the feel comfortable although they are strangers, getting to know each other for the first time. It is really practical for families which have kids so that they can learn something else from outside classrooms.*" (Interviewee NE_6)

The biodiversity research in the area is typically from foreign researchers. They come for projects, studies or a joint programme between Thai and foreign universities. Sometimes, the researchers have brought their basic equipments, for instance microscopes, which they donate to the reserve afterwards.

•*Communication and understanding*

- The idea of biodiversity is not so common at the local level. This may be because a direct translation of the term "biodiversity" in Thai is too scientific and sophisticated to

understand. The local administration in the area in cooperation with the reserve has set up a number of activities to help local people understand biodiversity which local people will then protect. Interviewees mentioned this as follows:

> "*We are concerned about the local people who have lived here since their ancestors. There should be a more understandable term for biodiversity conservation. However, only a few people pay attention to our project and we do not think that it will work out in the villages. Therefore, we change our tactics to get in touch with the locals through their children, in school. This gets more interest from the children and they tell their parents to conserve biodiversity.*" (Interviewee NE_3)

> "*The community forest helps our project get to the next step. The locals would not want to hear biodiversity but if you say 'forest', 'animal' or 'plant', they would clearly catch onto the idea. Generally speaking, I would like to thank them for giving me a chance to be part of their communities; otherwise, the target would not have been attained. Befriending them is the best way to conserve biodiversity.*" (Interviewee NE_2)

5.4.2 The Kogma-Maesa Biosphere Reserve (Chiangmai Province)

Table 5.6 The interviewees from the north

Interviewee / ***Roles and Responsibilities***	N_1	N_2	N_3	N_4	N_5	N_6	N_7	N_8	N_9	N_{10}
Management-level role										
- Cooperating with executive staff	✓	✓	✓	✓	✓	✓	✓	✓		
- Biodiversity policy-making	✓		✓	✓						
- Research/training with advice and counselling	✓	✓	✓	✓					✓	✓
Operational-level role										
- Project operation/ general assistance	✓	✓			✓	✓	✓	✓	✓	
- Gather/update information and published documents	✓	✓	✓		✓	✓	✓			✓
- Fieldwork/events organising	✓	✓	✓		✓	✓		✓	✓	✓

Data collection was conducted in Chiangmai Province. It can be categorised into relevant themes as follows:

Maesa-Kogma Biosphere Reserve is located in Chiangmai Province which is in the north of Thailand. The fieldwork conducted in this biosphere reserve is provided in two categories: government officials and non-government officials. The focus group was conducted in Doi Pui village and the results are presented in the local residents key theme.

According to grounded theory, key themes were drawn from the data analysis by starting to decode from the data collection to transcription which all were in the Thai language,

highlighting similar words, phrases and ideas from the interviewees, which were then categorised into themes.

Table 5.7 Themes and subthemes drawn from Maesa-Kogma Biosphere Reserve

Theme	**Sub-theme**
Bureaucracy	Policy: bureaucratic order from the top
Budget	Inadequate budget: discontinuous budget allocation international source of funding
Attitude of government officials'	less concern with biodiversity potential to request a biodiversity project
Local residents	Conflict in village
Land use	Land use change
Research and training	No support from government
Communication and understanding	Terminology of "biodiversity"

Key themes drawn from the interviews can be categorised and the sub-themes are grouped as follows:

• *Bureaucracy*

Policy in the area can be explained as a divergence from the national level. The northern region is also affected by government bureaucracy from the top-down policy because Chiangmai is the second largest province and one of the most attractive tourist areas. A lack of cooperation between government officials and the locals in the province is one point of concern. This can be seen in the quote below:

> "*Work relating to biodiversity required dealing with many local government officials. Some of them are really helpful in that we agreed to contact them immediately if urgent assistance was needed. Yet, newly appointed officials or employees did not learn their roles before meeting, which meant wasting time and it is annoying. They were appointed in order to kill time prior to their next appointed position. Few of them stayed for more than six months or just a year.*" (Interviewee N_4)

Furthermore, the restructured bureaucratic system brought with it unpleasant cooperation among officials. The system is explained as follows:

> "*Since the restructured bureaucratic system, more complicated tasks have been assigned. The cooperation with some officials has been rather unpleasant. I would not want to see any conflict or disagreement at work but sometimes I have to let it go. The roles and responsibilities among us are considerably increased according to the new complex bureaucratic system. Somehow I do not understand what job I am working on and far more than that dealing with unbearable people makes me sick. Occasionally I consider resigning.*" (Interviewee N_6)

However, the bureaucracy has changed the structure of the organisation. This can be explained as follows:

> "*It is quite complicated dealing with many divisions. Only I and one other official are responsible for operational-level jobs. There are a lot of meetings with many provincial and local government divisions as well as local communities. However, the restructured bureaucratic system has not appointed a new government official but a government employee instead. The difficulty is that the government employee is not allowed to sign documents, particularly any payment and procurement. In addition, the numbers of retired officials have been considerably increased and this means a higher workload, yes it is already overloaded.*" (Interviewee N_2)

However, it should be noted that this area is the location of the King's Bhuping Palace at the Suthep-Pui National Park. Therefore, the area is the responsibility of the Royal Project which runs and manages the area as well as the local people, mainly hill tribe ethnic groups.

The reserve itself has no official office but it is separated into two responsible bodies. One is the Suthep-Pui National Park which administers the Maesa watershed. The reserve policy is to follow national park policy and regulations. The other is the Kogma Demonstration site under the Faculty of Forestry, Kasetsart University based in Bangkok. This site is only for students and researchers who study the watershed, forest and relevant topics.

Human resources for the reserve was not concerned with the national park since the responsibility for appointment of officials is directed by the central government. The number of temporary employees decreased slightly because the restructured human resource employment was taken into account. This is explained below:

> "*The national park or the reserve has a large area to manage. The ratio of employees who take control of each responsible area has become higher. We work harder according to the lower number of colleagues, particularly during the night shift. They were really good at this as local people who are familiar with the area. Since 2007, the national park has been affected by the restructured human resources. Some of them, who were not hired anymore, headed back to the*

> *agricultural sector or even worse had no job. They are keen to work here but have to accept the situation.*" (Interviewee N_5)

•*Budget*

An inadequate budget is one of the important issues in the area recognised by the national park. The budget allocation from central government was not quite enough to maintain the whole area. The provincial government had distributed a number of financial resources in order to continue working on the national park. Nevertheless, some of the national park area is intersected by the King's Royal Project located in the Suthep-Pui National Park. The Royal Project has a number of budgets for the area because one of the King's concerns is that hill tribe people had illegally been growing opium for trade. A quotation from an interviewee is presented below:

> "*The Royal Project helped the national park and the hill tribe people by giving financial assistance. The MONRE was not a concern of the Royal Project and the national park needed to maintain themselves. After 2005, financial assistance from the government was decreased. Tight budget management was applied to the national park in order to hire temporary employees to work here.*" (Interviewee N_9)

The government's discontinuous budget allocation appeared at the national park when the bureaucracy was restructured in 2002 and the new Department of National Park, Wildlife and Plants was put in charge. The strategy is that eco-tourism in the national park is the trend to follow and more accommodation and tent-allowance should be built in the area.

International sources of funding from the United Nations (UN), Association of Southeast Asian Nations (ASEAN) and Greater Mekhong helped maintain the area, but apparently the area is mostly for tourism and the budget is for eco-tourism, which seems to be for ad-hoc projects only (Chiangmai Provincial Office 2008).

•*Attitudes of government officials*

Government officials in Chiangmai Province are similar to those in the Sakaerat Biosphere Reserve in that they have limited concerned about biodiversity. Regarding the interviews, officials focused more on tourism as Chiangmai is well known for this rather than biodiversity conservation. Moreover, not only the officials who work with biodiversity conservation, but also local administrative organisations and NGOs paid more attention to tourism sector.

Because the reserve is in Chiangmai, the potential to request for the biodiversity project funding has been fairly easy to propose and get a response. Nevertheless, superiors are quite unlikely to approve if the proposals would not be in their interests and sometimes, biodiversity project would not have taken into account to the higher level. This can be explained below.

> "*As a local government official, I would like to point out that the biodiversity-related projects are easy to get it done as long as the aims and objectives particularly specified the eco-tourism aspect. It is because of the network of government superiors linked internally. The more tourists exist, the more income for the province. Not only does Chiangmai Province prefer it this way, but MONRE also supports them as well. Eco-tourism and the home stay service have been included in the local government vision, for instance.*" (Interviewee N_2)

Unsurprisingly, another local government official also provided a similar point of view regarding biodiversity projects in the province. This is shown as follows:

> "*Actually the biodiversity conservation issue would not be the first priority, I would say. Chiangmai Province promotes nature conservation so that tourists will come for the eco-tourism. This is the real agenda which has been added to the MONRE and distributed to the local environment office. There are a large number of eco-tourism projects as well as environmental quality promotion. The*

> *biodiversity projects which I have been working on, related with the locals, are rarely taken to high-level consideration unless tourism is involved.*" (Interviewee N_1)

•*Local residents*

Conflict in villages has happened quite a few times in the reserve. There are a number of hill tribe villages which have turned into tourist attractions. This was an area for growing vegetables and fruits before the development of tourism arrived. The Hmong (ethnic group) village on Doi Pui in the reserve (national park) welcomes in too many tourists more than the capacity limit of acceptance of the national park and the government has not done anything yet the village is at the transition zone of the reserve.

It should be noted that local residents are not concerned about the biosphere reserve but with the Royal Project, since support and assistance have been given to them constantly.

> "*Yes, we have lived here since our ancestors, long time ago. We do not really understand the concept of biosphere reserve but we do know the national park and research station, Huay Kogma, of the Kasetsart University nearby our village. We work and earn money by welcoming the visitors. The more tourists, the more income we gain. We also produce our handmade souvenirs and offer the guided tour for both Thai and foreign tourists. However, just want you to know that we really respect the King because he is the only person who always takes care of us without any hesitation. Our community had changed, stopped growing opium since the King provided us the assistances. We grow the highland crops, for example, strawberry, peach and plum, and these bring us the better quality of life. Long live the King.*" (Focus group N_1)

It seems that the hill tribe people in the area would not consider nature much. The point of view of a Royal Project employee is quite different. Here is a statement from the interviewee.

> "*The Royal Project aims to help ethnic groups in the area to have better quality of life. As a result of the King's intention, the pilot projects had been launched in order to support the local communities as well as protect the nature. Our concern is to conserve the nature and living with it. It has been decades that we help the locals and once it happened that we were against the locals and a number of conflicts rose. However, after the sincere attempts, the locals have had relatively better understanding and gradually accept our good intentions.*"(Interviewee N_5)

•*Research and training*

The reserve itself is not well-established for research and training, apart from the research station of Kasetsart University. This is supported by the government with the assistance of the previous term of government. The majority of research funding conducted there is from the Royal Project which have mainly been conducted on the agriculture for the highland development. The Highland Research and Development Institution is the body responsible for this particular issue and there are a number of projects regarding the reserve and the national park.

However, research has been conducted in the area without a systematic practice. The expression of one interviewee is presented below:

> "*A number of research and training projects are involved with Suthep-Pui National Park but it is not much related with the biosphere reserve. The Royal Project and Chiangmai University have some research networks based in the university. Well, just to let you know that a few researchers and academics have been doing research for their earnings and this is without any concern of the national research network.*" (Interviewee N_7)

On the other hand, Chiangmai University has a number of research projects related to biodiversity in Chiangmai Province. Local government and NGOs join the campaigns and assist in university-conducted research. The following statement was presented:

> "*There was more research about biosphere reserves when one of the biodiversity-specialised professors was here. She established the biodiversity research group. At that point the watershed was included as well. At present, there are several educational bodies in Thailand doing research in biodiversity. However, the majority of them are in biology and forestry instead of holistic management or conservation.*" (Interviewee N_{10})

•*Communication and understanding*

Likewise, in the Sakaerat Biosphere Reserve, the terminology "biodiversity" is not clearly understood by locals. It is obviously confusing when asking oneself what biodiversity is. Communication between local people and government officials has been better since the governor actually paid attention to the environment because it was not raised as a high priority issue and global trend of biodiversity conservation towards the province.

> "*We did not understand what biodiversity meant. Our thought was that plants and animals conservation. In fact, the MONRE made it more complicated using too technical terminology. We hoped that there might be a better and easier to understand terminology like 'global warming'. We helped to save the earth by using reused bags and recycled bottles in our communities. The MONRE officials should come to talk to the local people about what happened in reality rather than imagine from their experiences.*" (Focus group N)

As the understanding of the officials towards biodiversity definition would be implied as partly unclear and confusing. Cooperation between Chiangmai Province and biodiversity-related organisations has been suggested, providing better understanding with the assistance

of the Office of Natural Resources and Environment (Chiangmai). It is a constructive and helpful scheme working with regional and local officials.

•*Land use*

Changes in land use in the reserve appeared before establishment of the Royal Project in the area. The slash and burn tradition and shifting cultivation by hill tribe people destroyed a number of forests before the King's Projects changed their lifestyle and gave them jobs. Moreover, the tourism resorts and restaurants have been constructed in the area and the land use zoning from the province is not fully implemented. This directly affects biodiversity and local residents.

> "*The forest up on the mountain was thicker and greener than at the moment. When I came here to work first time I was impressed by that scenery. However, there are a number of project developments of landscape but it was done without asking local people or the hill tribe. The road was up to the peak of the mountain where you could find the waterfall and wild flowers. There have been more tourists who claimed they were coming here for eco-tourism but driving cars and motorbikes. It seemed that the Chiangmai Province prefers this way to conservation.*" (Interviewee N_3)

5.4.3 The Ranong Biosphere Reserve (Ranong Province)

Table 5.8 The interviewees from the south

Interviewee / ***Roles and Responsibilities***	S_1	S_2	S_3	S_4	S_5	S_6	S_7	S_8	S_9	S_{10}
Management-level role										
- Cooperating with executive staff	✓	✓	✓	✓	✓	✓	✓	✓	✓	
- Biodiversity policy-making				✓	✓					
- Research/training with advice and counselling		✓	✓	✓			✓			✓
Operational-level role										
- Project operation/ general assistance	✓			✓		✓	✓	✓	✓	✓
- Gather/update information and published documents	✓	✓	✓	✓				✓	✓	✓
- Fieldwork/events organising	✓	✓	✓	✓			✓	✓	✓	✓

The results from Ranong Biosphere Reserve are described in the following table.

Table 5.9 Themes and subthemes drawn from Ranong Biosphere Reserve

Theme	**Sub-theme**
Bureaucracy	Policy : bureaucratic order from the top
Budget	Inadequate budget: discontinuous budget allocation international source of funding
Attitude of government officials	less biodiversity concern potential to request funding for the biodiversity project
Local residents	Illegal immigrants
Land use	Land use change
Research and training	Budget: no support from local government
Communication and understanding	lack of knowledge of biodiversity terminology of "biodiversity"

Key themes highlighted by the interviews can be categorised and the sub-themes are grouped as follows:

• Bureaucracy

Policy

Policy in Ranong Province towards Ranong Biosphere Reserve is primarily the opportunity for eco-tourism according to nature conservation. The reserve is located in the mangrove forest which allows visitors and tourists to benefit from the atmosphere. In addition to the tourism aspect, the reserve also provides domestic and international researchers with knowledge of mangrove management related to local wisdom, as it is served by the UNESCO MAB programme. This is stated in the vision of Ranong Province and is consistent with the MONRE policy, particularly as the reserve is under the Department of Marine and Coastal Resources administration. The reserve policy has also been adjusted to government trends. The expressions can be found below:

> "*The reserve is part of the DMCR and follows the policy and vision. The policy here has changed over time. This depends on the economy of the country and the DMCR direction of mangrove conservation. Moreover, the policy can be changed according to the superior, regardless of social needs. The restructured bureaucratic system affected the reserve and everyone who works here. The policy implementation is intermittent and the reserve plan will be likely to adjust to reality. It is just discontinuity of policy because of the national politics and I cannot do anything despite accept it.*" (Interviewee S_2)

> "*The reserve serves Ranong Province according to UNESCO initiation. The policy towards this is mainly directed by the MONRE and DMRC. Ranong Province's strategies regarding natural resources also lead the reserve and there are a number of social needs to be taken into account. However, the government policies sometimes contradict the need of local people. The scientists and academics claimed that they know more than the locals. The global and national trends are being included in the provincial level accordingly. The acceptation of local wisdom becomes less concern once the bureaucrats took power.*" (Interviewee S_4)

However, the change in policy affected the bureaucratic system at local level. Civil servants needed more time to learn new jobs they had been assigned and that might apparently delay their current tasks. In support of this situation, an explanation is presented below:

> "*We needed to be informed well in advanced about the new policy so that we could manage our time for the new tasks. We have already been with overload works but any time policy changes, the specific tasks had been unusually assigned. There are less officials working in the office because of restructured bureaucracy. It should make everything better that why it is called 'restructured' although we would prefer to bring the previous system back. Obviously many projects are delayed since the employees are insufficient.*" (Interviewee S_1)

Likewise, not only were civil servants affected by the policy change, but it also influenced government employees as well. Two interviewees explained that:

> "*It was a swift change of policy although I was informed earlier. I discovered this when the circulated document arrived from the central government. The number of government officials here has become less and less since there is no appointment of a new position. The restructured system would not facilitate us better condition. Many friends of mine have already resigned because they could not wait for the new appointed position. They would have worked here if they had been appointed as a government employee instead of temporary government employee.*" (Interviewee S_3)

> "*I once worked as a temporary government employee based on government budget year by year. Well, I was lucky enough that there was a position available and I applied for it. It was a couple of months before the restructured bureaucracy as far as I remember. Now I am responsible for several projects and unfortunately there is only one temporary government employee because the civil servant number decreased according to the restructuring.*" (Interviewee S_9)

Bureaucratic order from the top

According to the Thai bureaucratic system, higher positions have the right to order and file documents and employees logically. The Thai culture of superiors and subordinates respect considers norms that Thai people take into account. The lower position employee is unlikely to refuse the order from the superiors. It is according to the civil servant's discipline as well that the subordinate does what has been assigned to do (The Office of Civil Service Commission (OCSC) 2009). One interviewee explained that:

> "*Working in the government is not easy because sometime I faced a reluctant situation related with work. My boss asked me to consider taking on the higher position or superiors' business which I was unwilling to do. The projects involved many superiors and it was regarding a promotion. I, finally, did that for my own benefit of promotion although it was against my opinion.*" (Interviewee S_7)

In addition, the top-down approach was also found at the local government level. In Ranong Province it was reflected in the local level of administration. This implies that local government is structured according to Thai bureaucracy. The situation regarding bureaucratic order is presented as follows:

> "*The work allocation is influenced by the policy. Indeed, the Thai bureaucracy is top-down but it also depends on the organisation. I work here for few years and would like to see something improve. Only my experience develops but the policy does not. The bureaucratic system makes me sometime feel uncomfortable. I stay in the bureau until late because there are too many jobs to be administrated. Dealing with other government officials in the province is more difficult since the bureaucratic system brought the complicated system with them. I found the documents which I sent earlier stuck in the higher position desk for few days waiting to be processed. What should I wish for?*" (Interviewee S_8)

Furthermore, it should be noted that the unstable changes of the bureaucratic system has been perceived by locals. Although the government has attempted to bring back governance into the bureaucratic system, yet it seemed to be successful. Here is a statement to stress this issue:

> "*There have been changes too often in the bureaucratic system. I have tried to explain to the locals but they still do not clearly understand, neither do I. Working with the local communities every few months there are a number of things changed. Who is the reliable person? The locals wait for up-to-date information but in a couple of months the officials, who are familiar with them, have been appointed to a new position. They have been relocated, of course. Newcomers usually bring a new system and alterations. The locals only wish to understand us without confusion and unreliability from both local and national politics.*" (Interviewee S_4)

•*Budget*

Budget is another perspective regarding biodiversity implementation. Budget allocation for biodiversity conservation is directed from central government. The reserve has received a budget from MONRE and DMCR, as under the administration. However, the budget aspect for the reserve is concerned related to implementation. The sub-themes involved with the budget are presented below and supporting by findings from the interviews.

- *Budget adequacy*

The amount of budget received per budget year varies between organisations. The Ranong Reserve budget allocation has decreased considerably since the restructured bureaucratic system. DMCR considered the reserve as a relatively small research station. Although the reserve is part of the UNESCO MAB programme, there has been no officer from UNESCO or budget allocation recently. However, maintenance of the reserve seemed to be neglected due to an insufficient budget and the limitations of Thai government regulations. This is stressed in the following statements:

> "*It does not look nice here, I know. There was a time when everything here was perfect but it depends on the connection of the head of the reserve to be in the decision-making process in the central government. The proposals for maintenance have been disapproved for a while. The budget received is currently not enough for the maintenance. It has to be left this way. On top of that the budget is not allowed to fix the broken houses for researchers because most of them were supported by the JAICA. It is against the law to maintain them with the Thai government budget. What else can I do?*"(Interviewee S_2)

In addition, the budget from Ngao Subdistrict Administrative Organisation (SAO) has been inadequate according to the budget limitation, although the reserve is within the responsible area. It should be noted that Ngao SAO's attention has been directed towards the infrastructure construction rather than maintenance of the reserve. One interviewee pointed out:

> "*Actually we do concern about the reserve. Most contracts have been signed to maintain the infrastructure, for example, road, waterworks, etc. The road to the reserve was built by the Ngao SAO budget. However, the reserve is under the DMCR and it is different responsible body. If the DMCR would pay more attention to the reserve, the budget would arrive immediately without any barrier. We will try to propose the budget for the reserve next year but nothing is promised.*" (Interviewee S_8)

In addition, the budget from Ranong Province allocated to the reserve followed the province's development of potential tourist attractions. Although the budget reached the reserve, the limitation of maintenance is found similarly. One interviewee stated that:

> "*The budget reached the reserve according to the previous policies. However, the policies have been changed from time to time, this always affects the*

budget allocation directly. We have had meetings quite frequently among our local government but this is far beyond our responsibility. The research station needs more attention from the DMCR. It can be said that the Ranong Province priority is not that high." (Interviewee S_5)

- *Discontinuous budget allocation international source of funding*

The financial perspective of the reserve is another crucial point. The buildings and houses in the research station have been neglected and are all waiting for maintenance. The budget allocation was discontinued according to the vision of the DMCR. In 2009, the DMCR did not approve a budget in which the research station proposed to improve the landscape. One interviewee stated that:

"*The proposal, which I had prepare, for the landscape improvement was sent to the DMCR. I was hoping to receive positive feedback but I was wrong. It was advised that the budget for the research station was discontinued for this year but it could be proposed for the next budget year. There are quite a few researchers who wish you to stay here in order to conduct the research. However, the houses are apparently in very poor conditions and even snakes are inside. Who wants to risk? There was no chance to make it better according to the disapproved proposal.*" (Interviewee S_4)

•*Attitude of government officials*

The attitudes of government officials could help conserve biodiversity in the area. The attention of officials might also provide biodiversity conservation in the right direction towards the local residents. However, differences were found in the attitudes of officials in Ranong Reserve and Ranong Province towards biodiversity. These are detailed below.

- *Less concern with biodiversity*

There are a number of officials whose jobs involved biodiversity conservation but with a concern about different issues. Some are very much concerned with biodiversity, whereas others are not concerned. Examples of the interviewees' opinions are presented below:

> "*It is my responsibility to carry out the biodiversity-related job. It is not because I am hired to be in the position but of our concern, the concern of nature and our future generations. I would call this awareness because I was raised in the countryside where plants and animals richness is and I want to protect this from degradation.*" (Interviewee S_{10})

Besides, the concern about mangrove from the local can be explained below:

> "*The mangrove is our concern. Our food, lives, income and family exist because of the mangrove. You know, when Tsunami hit in 2004, several people survived in the mangrove as it buffered the wave. It also helps protect the tidal flow and trap fine sediment. I live here as part of nature and will do anything to prevent any harm to our mangrove. I teach my kids to protect nature too. Well, I hope the education can help more or less with this aspect.*" (Interviewee S_3)

Surprisingly, some officials play their part with biodiversity-related tasks because they just "do their job". For example, they enforce the law to protect against deforestation in the area. However, concern for the mangrove is of a lower priority to them. This can be explained by the following statement:

> "*My job is to look after the well-being of the locals in my responsible area. The biodiversity concern is not as high level as the economic or financial one. As long as the local people have got enough income for their living, there will be no issue to be raised. I have a workload and quite happy with my job since I started to work here. Awareness raising is not our responsibility but should*

> *come from the MONRE, the DMCR and the DNP for instance, instead of our office which is under the Ministry of the Interior.*" (Interviewee S_8)

Similarly, there is an example of a government official in the area who has limited concern about biodiversity. This demonstrates below:

> "*The government did not ask us to protect the biodiversity then I think it is not our job. I work with the locals who live and utilise the mangrove but it did not mean that the main responsibility is to conserve them. The research station has done this for many years and I find it appropriate as it is under the MONRE. Our office cooperates with the Ranong Province if there is any project related to biodiversity or nature conservation. We always support the research station but we need to know if something is required for the project or campaign.*" (Interviewee S_6)

- *Potential to request funding for the biodiversity project*

The biodiversity project is rather less important and, in the same way, the potential of the biodiversity project is relatively low. There are a number of infrastructure project developments as well as economic concerns in the area according to Ranong Province office project documents (2009) and Ranong Biosphere Reserve documents (2005-2010). This aspect is stated as follows:

> "*It is thought that Ranong Province has the potential to be a newly developed tourist attraction. There are several interesting places, for example, hot springs, waterfalls, mountainous area, beaches and islands, mangrove forests and 'Morgan', the ethnic group in the nearby islands and live by the sea. Ranong Province is next to the Myanmar border where tourists can pay a day trip visit. In term of biodiversity, I would not say that it is not important but the potential for budget approval is relatively low compared to the tourism project. Although a few biodiversity projects had been approved, these were*

> *discontinued and during this economic crisis, only projects to boost the province's income would be approved, believe me. You should take a look at the conflict between local people and the government. They are always against each other when it comes to development. The social needs and local people's interest have always been our concern but economic and tourism perspectives would not be lower priorities. It is not easy to deal with the central government regarding budget proposal. I only hope for the best for Ranong Province and to the locals.*" (Interviewee S_5)

Likewise, the funding project of biodiversity conservation is quite likely to be rejected in this province and this can be explained similarly according to the issue of potential for funding of the biodiversity project from the interviewee who is responsible for few biodiversity-related projects below:

> "*It is quite difficult to raise the issue of nature conservation in the meeting. The budget allocation and priority are always concerned in the meeting and I could rarely convince the members in the meeting or seminar to pass on the biodiversity topic unless it is a hot issue from the central government or the MONRE. The motivation of the team is that they follow the direction of government policy regardless of the locals' needs.* (Interviewee S_9)

•*Local residents*

Local people living near the reserve have lived here for a long time; more than four generations. Most of them work as fishermen and a few work in the agriculture sector. The conservation activity of the locals has variably different as they previously lived solely on the traditional fishery but lately some of them have changed to be a centre for eco-tourism or home stay. They considered changing their jobs because fishery is unstable because the numbers of economically important aquatic animals have lessened considerably. Thus, their income had not been sufficient without extra earnings from homestay and visitors. This can be illustrated as follows:

"*There were plenty of fish, mud crabs and jellyfish in the past but the numbers of those have been relatively decreased. For example, we still remember the month we used our dip nets to sweep a lot of jellyfish floated during the neap tide. The jellyfish were sent to a small processing site in Ngao subdistrict, where merchants waited to estimate the prices and we earned money from selling them. However, the unstable situation of our income appeared because there were influxes of Burmese since there was a war near the border. As a result, we considered opening our village to tourists and this brings more income to us.*" (Focus group S)

Besides, the locals have had their own ideas of earning more income rather than relying on nature harvesting by open eco-tourism homestay. The following quote indicated that:

"*We lived in a nice village and it is our home for generations. We considered establishing a homestay for tourists after discussing with other villagers. We also organised guided tour and our subdistrict offered the most delicious Roti (flat pastry) in Thailand. The main income is not only from the fishery but also from taking visitors around the mangrove by long-tailed boat or motor boat, having lunch on the islands nearby serving fresh seafood. The tour operators, restaurants owners and small enterprise of shrimp paste products are our family members and friends. We are really grateful for nature since this allowed us to survive and we are proud of our area*". (Focus group S)

-Illegal immigrants

Nevertheless, it should be noted that Ranong Province has faced the problem of a hidden population utilising the natural resources as the province is located next to the Burma border. This is stressed in the opinion below:

> "*The overall policy of the province always follows the central government with additional specific points from the local area. The nature conservation is mandatory according to the law with direction of eco-tourism. Ranong Province needs more development in investment but the approach of development is in contrast to the local residents. The areas which are close by the border to Myanmar face the problem of policy implementation utilising the natural resources because of the hidden population from Myanmar. The policy has been slowly developed and never been up to date. Although the provincial government has attempted to propose the project about this, the current trend is quite unpredictable.*" (Interviewee S_5)

Moreover, the influx of Burmese illegal immigrants had pushed Ranong Province into a bad situation. Not only did it affect the villagers, but the provincial government was deeply concerned with solving the problem. Fortunately, the Cabinet Resolution regarding the illegal immigrants from Myanmar, Lao and Cambodia approved the Announcement of the Ministry of Labor B.E. 2549 (2006) that illegal immigrants working for Thai employers must register by 30 June 2006. This influenced the Ranong Province as it had one of the largest influxes of Burmese illegal workers. A change in the province as well as the reserve occurred immediately after the announcement. One official explained that:

> "*To solve the illegal immigrant problem, there is no need to give them chance to stay here longer and they could take more advantage of our resources. If we prefer to hire them in the fishery industry, we could do it wisely instead of letting them stay. Whilst some of the illegal Burmese immigrants registered themselves, the local people worried about their homes and their safety. The reserve and Ngao SAO lost a lot of budget to manage the area because those immigrants abused the aquatic resource as well as the mangrove. The central government never thought about this aspect at all as long as there is available benefit.*" (Interviewee S_6)

-Conflict in the village

Conflict in the village appeared because of the utilisation of mangrove forest. A number of villagers attempted to protect the catching fry by preventing anyone from them, prevent mangrove cutting for charcoal, and block Burmese immigrants getting into the area. The following quote demonstrates the opinion of the villagers:

> "*We experienced a period when there were not enough resources for our* residents. *We found several Burmese abused the aquatic resources. They caught everything in the sea and they also cut the mangroves for charcoal making. While we offered them work with us in order that they could earn some money to live, some of them refused and still abused the resources. Soon after that, we talked to them and asked the local government to witness and support. The result was so good that the immigrants were afraid of being jailed. We want to compromise with them if they would be negotiable.*" (Focus group S)

•*Research and training*

Research and training in the reserve have faced a number of problems due to lack of budget and discontinuity of research. The support from government is apparently discontinued, although the networks of international organisations or NGOs have been established. An example is presented here:

> "*There have been a number of international researchers coming to conduct research in Ranong Province because of the high biological diversity, particularly mangrove and island ecosystems. They came here and took a lot of information back to their countries and of course, they wanted to register a patent. It will be announced when the successful researcher has obtained the patent, right after that the Thai government will shout and ask to bring back because it is from Thailand then has to stay in Thailand with Thai people.*" (Interviewee S_{10})

It should be noted that more research was conducted earlier, particular between 2000 and 2004. The reason behind this involved connections with of the head of the Ranong Reserve. It is relatively likely that more research would be conducted if the head of the reserve had a high educational level, in fact, the head does not. This can be illustrated in the following statement:

> "*Actually, the previous head officer had several contacts with international organisations. It was trendy that a lot of researchers came here to do research. I think it was since he had a PhD level education from abroad and that really helped. Moreover, he was also working in the central government which meant that he met more high position officials. In my case, I only had bachelor degree from not famous university and I did not know so many foreigners or researchers. I did my best promoting and maintaining the reserve as I was appointed.*" (Interviewee S_2)

•*Communication and understanding*

- Terminology of "biodiversity"

It should be noted that the terminology of biodiversity is not easy to understand. Local people and local officials similarly perceived that the government should consider using another word if they wished people to be more concerned with biodiversity. The interviewees stressed that:

> "*What is biodiversity? I asked myself more than once when firstly heard. Although I am a scientist but I still need to interpret this word from Thai into Thai … (laughing) … In my opinion, the word 'biodiversity' should clearly point out that it is plants and animals without unclear definition. If the government could make it as simple as, for example, the global warming translation into Thai —'hot earth', it could help people understand instantly.*" (Interviewee S_1)

> "*It'd better replace this word with animal and plants or something else which represents the real meaning. Only insiders would grasp the idea of biodiversity which is complex to interpret. What about outsiders, stakeholders and people in remote areas? How many people would understand the term biodiversity?*" (Interviewee S_4)

- Lack of knowledge of biodiversity

Knowledge of biodiversity could influence in the biodiversity conservation. The lack of knowledge may lead to less concern about biodiversity and participation in biodiversity-related activities. It is not only local people who have a lack of knowledge of biodiversity, local government officials also have little knowledge of it. The following statements indicated that:

> "*Can you please explain again about biodiversity? I know about nature conservation and environmental management. Is it relevant? I heard about this but never clearly understand. I thought it was about biology or science.*" (Interviewees S_6)

> Not only does the official not understand about biodiversity conservation, the villagers are also confused. It can be demonstrated below:

> "*Is it about biology? We know about science but not biodiversity. The promotion campaign from the MONRE never reached us, although there have been some researchers conducting aquatic animals here. We did not want to perceive as stupid or from remote area. But it was too difficult to guess what biodiversity was about.*" (Focus group S).

5.5 Summary

This chapter presents the results of biodiversity policy analysis and policy implementation for the three biosphere reserves. The research findings show that biodiversity issues at the selected reserves resulted from a number of factors including: bureaucracy, budget, government attitudes, problems in communication and understanding, and land use change. In particular, the centralisation of biodiversity policy and a lack of information on biodiversity was found for all reserves. Indeed, if the current situation in Thai biodiversity is not resolved and the government continues to use a conventional decision-making approach that does not encompass and support biodiversity conservation, there will be further controversy leading to severe impacts.

In order to effectively solve the problem, the different societal viewpoints, interests and concerns of local people must be respected. Disclosure of factual information regarding the biodiversity policy processes to stakeholders is essential. Importantly, public participation in the policy decision-making processes must be encouraged. This will lead to a greater chance of achieving in biodiversity conservation.

In the Sakaerat, Maesa-Kogma and Ranong cases, it was found that there was a low level of policy implementation. The findings show that the public rarely participated in the decision-making process at a local level. Some participants claimed that it could be in the consultation category and that the local communities have not been included or taken seriously their opinions into the policy process.

Although local people are now provided with more opportunities to take part in the biodiversity policy development and implementation, in practice, policy processes are still limited by the authorities. The government still has full authority to make a final decision on a policy even the decentralisation has been enacted according to the current Constitution (2007). If the government actually realises the importance of biodiversity policy, then relevant laws and regulations that enforce and encourage biodiversity policy in practice will be initiated.

In the next chapter, an evaluation of the effectiveness of biodiversity policy, including barriers to its implementation, are presented from the case study and discussed.

Chapter 6 Evaluating the Effectiveness of the Thai Biodiversity Policy: a discussion

6.1 Introduction

An evaluation of the effectiveness of the biodiversity applied in the case study is an essential part of this study. It can identify the strengths and weaknesses of the policy and, moreover, the results will help to improve biodiversity policy in the future. This chapter aims to identify and document common themes drawn from the interviews about the effectiveness of biodiversity policy. The effectiveness of biodiversity policy, as perceived by the interviewees, is qualitatively analysed. The data obtained from various sources of information, in-depth interviews, semi-structured interviews, and the literature review findings, were used to evaluate the effectiveness of the process.

This information will be analysed, interpreted, discussed and applied in relation to biodiversity policy concepts using evaluation criteria developed and discussed in previous chapters. This evaluation incorporates both the biodiversity policy process and outcome, as shown in phases two and three of the framework. The questions used to gather sufficient data for analysis included: how stakeholders were involved in the decision-making process; how input from the public influenced the decisions; and whether the biodiversity policy process solved the biodiversity conservation problem. The results of participant interviews illustrated how well these criteria were met in the process and brought to a discussion. A number of quotations are used to emphasise these aspects.

6.2 Context evaluation of Thai biodiversity

According to the theoretical framework established in the Chapters 2 and 3, the research aimed at the effectiveness evaluation of the biodiversity policy for the case study. Evaluation is undoubtedly essential to verify the effectiveness of biodiversity policy

regarding improvements in policy development and implementation. In this study, the evaluation was based on the perceptions, experiences and attitudes of stakeholders as related to pre-defined criteria. To evaluate the effectiveness of biodiversity policy, documents, in-depth interviews and semi-structured interviews were employed. Key aspects of effective biodiversity policy and the factors influenced by it are emphasised in the findings. In order to gain wider and unbiased views of individuals, the interviews used open-ended questions to ask the interviewee how effective the development and implementation of biodiversity policy were in their experience.

6.2.1 Context evaluation

Context evaluation helps understand the factors that influence to policy process. According to the evaluation framework of biodiversity policy development and implementation (figure 3.2), the dimensions for this evaluation have been identified below:

6.2.1.1 Historical background

To understand one's country, historical background should be included and analysed systematically. Biodiversity conservation has begun in Thailand approximate a hundred years ago by a perspective of forestry. This linkage involved Thai economy and society to biodiversity conservation in terms of economy for timber industry. In fact, the systematic biodiversity conservation in Thailand is adopted from Western format that is initiated from CBD in 1992. Although Thailand has immediately become a signatory party at the Earth Summit in Rio de Janeiro in 1992, the national CBD implementation has been ratified in 2004. It should be noted that the ratification of CBD in Thailand has not yet brought up any local biodiversity plan to the local level (ONEP 2012).

Legislation and regulation

The context of legislation and regulation in Thailand regarding biodiversity was found that its starting point established from international influence. The current constitution (2007)

enforces in Thai society towards people-based, moreover, this constitution encourages citizens to exercise their rights in participation of any government activities. However, it was found that the laws and regulations have not been up to date and some have enforced for a long time without any amendments for current practice. It was found from the case study of Sakaerat biosphere reserve that the flora and fauna smugglers will be fined if found guilty. The fine is between 500 to 10,000 Thai baht comparing to the species which are threaten or endangered. Interviewee NE_3 explained that:

> *"The smugglers have been caught in the core area and sent to the police station. They were fined, in most cases, approximate 1,000 baht. I am always disappointed that the laws cannot do anything better than this. Although I know that the laws about conservation has not been changed for long time and I don't think it will be changed soon."*

Administrative structure

Thailand administrative structure began in the systematic once during King Rama V. The administrative structure has three level of administration. National, regional and local levels have been identified and also provincial level plays a key role in biodiversity conservation too. Besides, the local government or Tambon administrative organisation cooperates with provincial level to protect biodiversity. However, it was found that a number of local government officials prefer to follow the development of infrastructure in their area instead of conservation. This can be presented in the interviewee's view below:

> *"It was understood that people judges development of the area from what they see. For example, new road construction project has been launched and the local government compares their performance with other local administrations in the same province. I don't think this is a good idea at all but as long as no local people or community say it out loud to the media, nothing is upon the local administration." (Interviewee S_{10})*

Bureaucratic system

The bureaucracy in Thailand has influenced from its cultural aspect. Thailand has a long history of client-patronage system and this influences in Thai culture in many ways (Bunyakorn 2006). The bureaucratic system roots in Thailand that sometimes seems to control the subordinates or low-class people. The higher positions in the bureaucratic system sometimes perceive as the 'patron' who take care of their clients in the client-patronage system. It also reflects from seniority system which was commonly found in Thailand. The case of central government illustrates that among the bureaucrats the freedom of speech has been excluded and this case addresses the situation as follow:

> *"The bureaucracy is a system that becomes common in our working environment. It is not because of being government official, everyone in Thailand knows this that it will not be equal in terms of exercising your rights or express your feeling. The feeling you have should keep it carefully particularly the negative ones as it may affect your promotion and future in your career." (Interview C_1)*

6.2.1.2 Thai biodiversity problem

Institution/ Political perspectives

Institutional and political changes considerably affected Thailand particularly during the period of democratic and military coup in 2006. The NBSAPs have been enforced after CBD ratification in 2004. However, political situation was not stable and affect biodiversity policy because the military coup took power and the constitution was aborted. During the change, the government had to follow the curfew and a number of projects and field research had been delayed (ONEP 2007). One interviewee states that:

> *"During the curfew, we were asked to leave the office earlier because the soldiers told us to do so. Most officials did not go for the fieldwork since the*

> *projects were frozen for a while waiting for next green lights. Although the coup did not do anything harmful to people, I would have preferred to be in a democratic system. The change did not improve people's attitudes towards Thai government. We would love to see how Thailand goes further in conservation and policy implementation rather than changing periodically." (Interviewee C_{14})*

Economic

Thailand's NESDB is a master plan for the country development as the globalisation influences the country's to be westernised development. From the literature review, Master plan for economic development is the main point of how to shift the country to be 'developed'. It is likely that Thailand follows global structure of development that judges from quantity more than quality (Sangchai 2002). Furthermore, industrialisation needs more raw materials to produce goods, particularly for export.

Socio- cultural perspective

Social context can be described as action of one's society. It begins from a person, people and community which has brought more people together having interactions. The interaction in one's community builds a typical way of exchange culture. Thailand has its own rich in culture and influenced from Buddhism. More than 80 per cent of its population are Buddhists. Spiritual aspect is as well included in this matter since Buddhism is recognised as 'deep ecology' which related to spirit and mind development (Kaewporn 1999). Buddhism influence in biodiversity conservation that considered life to all organisms that is 'flora and fauna'. In addition, Buddhism also encourages the followers to balance or keep the middle path. Biodiversity conservation in Thailand is strategically considered as conservation of forests' spirits. For example, the project of conservation that to bring trees or forests into monkhood is quite common in the Northern and Northeastern tradition. The monks will bless the trees as if they become into monkhood and later will be wrapped with yellow clothes for monks (jiwawn). This is a strategy to protect the forests

from exploitation because local people believe that trees in monkhood are sacred. This can be illustrated from the focus groups below:

> *"Bringing trees into monkhood is a common tradition here to protect forest from deforestation. The locals believe in the trees' spirits which protect them from bad luck. The Buddhism monks also play a key role in our area who advise the locals how to solve some of their problems. It may not easy to understand if you do not believe in Buddhism. Some people laugh and ask as if we did some nonsense activity. In fact, we know how to live with nature. (Focus group NE)*

It is clearly indicated that deep ecology and Buddhism have some linkages to one another according to Sponsel and Natadecha-Sponsel (1997) study stated in Chapter 2. The locals perceive that biodiversity is a basic of nature regarding spiritual aspects and that also provides them source of food and medicine. Policy makers and decision makers should be more open-minded and step out to see how reality is at local level rather than preparing the policy from the top-down approach. Previous and current NESDBs have stated that the government is going towards decentralised administration, while the government officials at central government (in the Ministry) choose to stay with the traditional top-down hierarchy since they have been used to the patron-client system to order from the top level.

Once the Thai context has been taken into account to provide better understanding about Thailand context in particular, the process-orientated evaluation will be carried out as follows:

6.3 Process-orientated Evaluation

In accordance with the process-orientate evaluation criteria given in chapter 2, an evaluation of the effectiveness of biodiversity policy is presented below.

6.3.1 Clarification of Goals

Thai biodiversity policy development has been separated into several divisions according to existing biodiversity-related departments. It was found that cooperation among the involved organisations has not been organised well. Clarification of the policy goals is needed in order to present and demonstrate the objectives of the policy. Once the goals and objectives have been set, other indicators are used to assess the success of the decision-making (Hauser *et al*. 2006). Therefore, goal clarification is not fully included in the policy. It could be implied that the set of goals is most likely to concern economic issues rather than pure biodiversity. Policy creation begins with the cabinet, who set their policy statements according to the current political situation. For example, the Ministry of Natural Resources and the Environment's strategies followed government policy as set by the military regime during the curfew period. Thus, fieldwork and data collection relating to biodiversity were frozen as the ministry's policy changed (Ministry of Natural Resources and Environment (MONRE) 2006).

Thailand has developed several national strategies on natural resources management, conservation and utilisation in 2003 and 2004. These national strategies were adopted by the cabinet in 2003–2004. These include the National Strategy on Forest Resources Management, National Park Management, and Wildlife Management all of which had been developed with inputs and reviews by relevant sectors including academics, the private sector and non-governmental organisations (NGOs).

In biodiversity management, decentralised decision-making, budget planning and allocation to local government authorities also promote and support local community roles (Office of Natural Resources and Environmental Policy and Planning, 2007). However, the government rates biodiversity below economic, social and military factors. This is because the government's policy declaration needs to follow the Nation's Economic and Social Development Plan (NESDP) which is the master plan for the country. To date, government

plans have stated that economic considerations come first in order to direct the country towards globalisation and become a developed country (NESDP 2009).

According to the Thai NESDP, poverty needs to be solved and not only Thailand concerns about their poverty but also consider biodiversity management following mainstreaming biodiversity. As the biodiversity exploitation occurs because of the furnishing to the industrialisation and the local residents are inaccessible to their natural resources. Biodiversity still needs to be placed within the cycle of economic development (Angelstam *et al.* 2003; CBD Nagoya declaration Biodiversity and Development 2010).

6.3.2 Inclusiveness and adequate representativeness

To evaluate biodiversity policy, one of the criteria is that the affected stakeholders are included and well-represented in the policy. Therefore, stakeholder engagement theory is associated with the policy evaluation using stakeholder analysis. The results of a study on stakeholders' roles in biodiversity management (Naughton-Treves *et al*. 2005) indicated that that a policy process would be effective when stakeholders clearly understand the goals of their participation, their role in the process and the issues involved. There are a number of documents in which the authorities explain how different levels and methods of participation were connected to the decision-making process (Prager and Freese 2009). Without this, all the effort, time and money put into the process are worthless as the process would be significantly affected by the frustration felt by confused stakeholders.

Stakeholder analysis helps in identifying and understanding the roles, responsibilities, relationships, interest, influence and importance of the people and organisations involved in the policy-making process. As mentioned in Chapter 2 regarding stakeholder identification, three levels of stakeholder have been identified and these are detailed below.

Primary stakeholders

- Government (national, regional, provincial, local), MONRE, MOST, ONEP, DNP, DMCR, local people, local government, municipality, community and village.

Secondary stakeholders

Academics, NGOs, local government.

Tertiary stakeholders

Academics, NGOs, the business sector.

The stakeholders in this study can be categorised using the above levels, as shown in Table 6.1.

Table 6.1 The stakeholders' categories and stakeholders group

Stakeholder category	**Primary stakeholder**	**Secondary stakeholder**	**Tertiary stakeholder**
Government officials	C_1, C_2, C_3, C_4, C_5, C_6, C_7, C_8, C_9, C_{10}, C_{11}, C_{12}, C_{13}, C_{14}, C_{15}, C_{16}, C_{17}, N_1, N_2, N_3, N_5, NE_1, NE_2, NE_3, NE_4, S_1, S_2, S_3, S_4, S_7,		
NGOs		C_9, N_9, N_{10}, NE_9, NE_{10}, S_{10},	
Academics			C_8, C_9, C_{11}, C_{14}, N_3, N_9, N_{10}, NE_9, NE_{10}, S_{10},
Local government	N_4, N_6, N_7, NE_6, NE_8,	N_8, NE_5, NE_7, S_5, S_6, S_8, S_9,	
Local people / Focus groups	Focus group N, NE, S		

According to Thai national biodiversity strategic and action plan, the stakeholders have been included in the policy development process. Local communities and local governments should be informed about biodiversity policy at local level, in fact, local people at local level communities have not been informed from local government. The table 6.1 presents all relevant stakeholders from the study that have been categorised in three different groups of stakeholder in accordance with CBD. These groups will be explained by adopting actor-linkage matrix in the next section.

Engaging the public and all stakeholders in the decision-making process is viewed as a significant component of good democratic governance (Mickwitz 2003). However, not all citizens are able to participate directly in the process. One interviewee pointed out that:

> "*It is not easy to let everyone involve in the decision-making process. However, stakeholders have the right according to the current Constitution to participate and must be informed about the relevant information of the policy*." (Interviewee NE10).

An important issue to be recognised is whether different viewpoints are sufficiently represented in the decision-making process. To be effectively implemented, the policy should involve as many different parties and individuals as possible (House 1999). The appropriate representation of participants in any policy-making processes is crucial and needs to be carefully considered because an inadequacy of representation will result in a reduction in the diversity of the stakeholders in the processes, which can affect the quality of the input as well as the processes (Mitchell 2005). In particular, Sinclair (2004) suggested that every participant should have an equal status and right to participate, present their ideas and evaluate the alternatives. For many reasons discussed earlier, it was difficult to claim that the representatives in the policy-development process in Thailand were appropriate and inclusive since a number of stakeholders claimed that they were excluded from the process.

Once the stakeholders have been analysed by applying the stakeholder power relationship, the involved actor can be defined. The actor-linkage matrix can help to justify relationships among the stakeholders. The relationship might result in cooperation, complementarity or conflict (Matsaert 2002; Reed *et al.* 2009). In order to investigate this, the researcher adopted an actor-linkage matrix as presented below:

Note for tables 6.2, 6.3, 6.4 and 6.5:
To indicate the relationships among the stakeholders using this actor-linkage matrix:

a. If the relationship is one of conflict, mark the appropriate cell with "×". The relationship is one of conflict where the expected roles and interests of the stakeholders tend to nullify each other, or when the implementation of one obstructs the implementation of another.
b. If the relationship is one of complementarity, mark the appropriate cell with an "o".
c. If the relationship is one of cooperation, an "✓" will be marked.

Table 6.2 Actor-linkage matrix of relationships among central government stakeholders

Stakeholder	**C_1**	**C_2**	**C_3**	**C_4**	**C_5**	**C_6**	**C_7**	**C_8**	**C_9**	**C_{10}**	**C_{11}**	**C_{12}**	**C_{13}**	**C_{14}**	**C_{15}**	**C_{13}**	**C_{14}**
C_1																	
C_2	✓																
C_3	✓	✓															
C_4	✓	✓	✓														
C_5	✓	✓	✓	✓													
C_6	✓	✓	✓	✓	✓												
C_7	✓	✓	✓	✓	✓	✓											
C_8	✓	✓	✓	o	o	o	o										
C_9	✓	✓	✓	o	o	o	o	✓									
C_{10}	✓	✓	✓	o	o	o	o	o	o								
C_{11}	✓	✓	✓	o	o	o	o	o	o	✓							
C_{12}	✓	✓	✓	✓	o	o	o	o	o	o	o						
C_{13}	✓	✓	✓	✓	o	o	o	o	o	o	o	✓					
C_{14}	✓	✓	✓	✓	✓	✓	o	o	o	✓	o	✓	✓				
C_{15}	o	o	o	o	o	o	o	o	o	o	o	o	o	o			
C_{16}	o	o	o	o	o	o	o	o	o	o	o	o	o	o	✓		
C_{17}	o	o	o	o	o	o	o	o	o	o	o	o	o	o	✓	✓	

The relationship of actors presented in Table 6.2 at central level can be explained that relationships were found either complementarity or cooperation. This may be because the actors are working together and have personal contacts through the network of alumni or civil servant. The government officials also contact with academics, NGOs in several

biodiversity-related projects or campaign organised by both public and private sectors. These relationships address the bureaucracy in Thai Government according to literature review in chapter 2 and influences from culture of seniority. Furthermore, it can be said that client-patronage system has rooted in Thai culture deeply. Generally, Thai people avoid disputing or arguing with others. They usually negotiate or compromise unless an issue is beyond limit of tolerance or it is a sensitive issue.

Table 6.3 Actor-linkage matrix for stakeholders from the North

Stakeholder	**N_1**	**N_2**	**N_3**	**N_4**	**N_5**	**N_6**	**N_7**	**N_8**	**N_9**	**N_{10}**
N_1										
N_2	✓									
N_3	✓	✓								
N_4	o	o	o							
N_5	✓	✓	✓	o						
N_6	✓	✓	✓	o	✓					
N_7	o	o	o	o	o	o				
N_8	o	o	o	✓	o	o	o			
N_9	o	o	o	×	o	o	×	×		
N_{10}	o	o	×	×	×	o	×	×	o	

The relationship of actors presented in Table 6.3 from the north demonstrates mostly complementarity relationships of actors. However, some cases were found that conflict relationships between the NGOs and government officials occurred in the region. On the other hand the NGOs and academic relationship was found conflict. This case represents different views in biodiversity issue, although both are academics.

Table 6.4 Actor-linkage matrix for stakeholders from the Northeast

Stakeholder	**NE_1**	**NE_2**	**NE_3**	**NE_4**	**NE_5**	**NE_6**	**NE_7**	**NE_8**	**NE_9**	**NE_{10}**
NE_1										
NE_2	✓									
NE_3	✓	✓								
NE_4	o	o	o							
NE_5	o	o	✓	✓						
NE_6	✓	✓	✓	o	o					
NE_7	o	o	✓	o	✓	o				
NE_8	✓	✓	o	✓	o	o	o			
NE_9	×	×	o	o	×	o	×	×		
NE_{10}	×	o	o	×	×	o	×	×	o	

The relationship of actors presented in Table 6.4 from the northeast. Most cases illustrate complementarity relationships. Thus, it can be implied that most actors have personal contacts either alumni network or civil servants. The case of conflict relationship was found in NGOs and academics that have different views in biodiversity management. Nevertheless, government officials and local administration work with NGOs and academics in this region according to the administrative system and bureaucracy.

The relationship of actors presented in Table 6.5 from the south. These actors from the region address the conflict between government official and local administration. Since biodiversity needs collaboration from various stakeholders, it was found that the local administration prefers to construct or develop the area following tourism rather than biodiversity conservation. This may lead to future exploitation of biodiversity because the local administration did not implement biodiversity conservation in their plan as no systematic promotion from central government about significance of biodiversity to local level.

Table 6.5 Actor-linkage matrix for stakeholders from the South

Stakeholder	**S_1**	**S_2**	**S_3**	**S_4**	**S_5**	**S_6**	**S_7**	**S_8**	**S_9**	**S_{10}**
S_1										
S_2	✓									
S_3	✓	o								
S_4	✓	✓	o							
S_5	o	✓	o	✓						
S_6	o	o	✓	✓	✓					
S_7	✓	o	✓	✓	o	o				
S_8	o	×	×	×	✓	✓	o			
S_9	o	×	o	×	✓	✓	o	✓		
S_{10}	o	o	o	o	o	o	o	×	×	

According to the lists of respondents in Chapter 4, the stakeholder analysis has been applied in this study in order to gain more understanding and clear situations of which involved stakeholders have been included in the policy process. The coordination and conflicts between stakeholders are dynamic since some stakeholders can be changed their positions according to the bureaucratic and administrative systems. This may lead to the collaborations among the involved biodiversity sectors. Moreover, the tensions may arise if the key players have conflict interests (Reed *et al.* 2009). The table below presented the analysis of stakeholder in different dimension of their interest and influence.

This table (6.6) presents interest-influence matrix of the stakeholders in biodiversity policy development. In Thailand, according to the constitution of the Kingdom of Thailand B.E. 2550 (2007) states the government decentralise the power to the locals. However, it was found that the power is still solely at the central level regarding biodiversity policy. At present biodiversity action plan at local level has not yet established. Academics and NGOs are included in biodiversity development process but local people who affected directly of biodiversity issue have no right to directly participate. They can participate through NGOs or civil society only. In addition, the local people from north and south have medium

interest in biodiversity issue that they would like to participate with their local communities. Academics have high interest in biodiversity and that could influence because the research conducted presenting results which have impact on biodiversity conservation.

Table 6.6 Interest-Influence matrix of the stakeholders in biodiversity policy development in Thailand (adapted from Reed et al. 2009; Matsaert 2001)

Interest / **Power**	**Low interest**	**Medium interest**	**High interest**
Low power	Local people NE	Local people N and S	NGOs
Medium power	Local authorities	Academics	
High power			MONRE, MOST, ONEP, DMC, DNP, DEQP,

However, from the findings, stakeholders' roles in biodiversity policy formulation were perceived as unclear. This can be explained in the following statement.

> "*I was preparing the biodiversity policy documents but was not sure that the concept of the following the CBD arrangement was clearly understood. I found a lot of confusion and contradiction between the international and national contexts of conservation, as well as the legislative aspect.*" (Interviewee C_5)

At a local level, stakeholders were similar to Interviewee C_5 and were apparently confused about their roles, although they are stated in the current constitution. Only five interviewees truly understood the roles of stakeholders and their right to participate.

According to table 6.6, the locals from NE reserve was found in low interest and low power category. Although the empirical data from focus group presented that they have a concern about nature, the eco-tourism promoted project for the area by the government has a significant influence on them. It was found that several locals have changed their livelihood

to be a homestay business-like since more income has been earned. The trees monkhood is still carried on because the locals would like to keep their own tradition and feel protected (Focus group NE). It can be demonstrated as follows:

> *"We earn more from tourists because this area provides them several activities such as walking in the forest and watching birds. The tourists visit here and fancy staying overnight or for a weekend break since most of them are from Bangkok. The power of buying from tourists makes some changes to the area. We sell local food, drinks, and souvenirs. While we still keep continuing the tree monkhood tradition, we want to earn more money as well. We still believe that the good spirits in the forest bless and protect us but it does not mean that the conservation has been on our concern more than the income we gain (Focus group NE).*

It is clearly expressed that although the focus group NE presented their interest in biodiversity conservation, their preference is an economic issue. As long as the locals' income is still low or inadequate for their family, it is more difficult to convince them to conserve biodiversity. This is a significant aspect which is clearly confirmed the situation in Thailand as one of the developing countries, in accordance with several authors stated in Chapter 2 about biodiversity conservation in practice in other developing countries.

6.3.3 Transparency

Importantly, evidence from the interviews showed that most interviewees (90% of the respondents) argued that this transparency was not fully met in this study. This is illustrated in the following text:

> "*Why did we not know about the policy process from the government? When we raised some questions about the progress of the policy, the answers were 'it is excellent but you need to wait a bit longer to see the result'. However, when*

> *the result was presented, this led us think what is behind the procedure. We would like to know anything about our community.*" (Focus group S)

Correspondingly, King Prajadhipok's Institute (2007) suggested that to solve this problem, the government should increase transparency by disclosing significant information to the public, and using participation techniques to establish people's opinions prior to commencement of a policy or any decisions being made.

> "*The transparency is uncommonly found in the Thai society and it has recently become a common thought of some groups of people that concealing information might help to win the game. Relating to biodiversity policy, transparency is needed in order to engage the public involvement or participation and disclosure of data. The worst thing would be that Thai people neglected transparency.*" (Interviewee C_7)

Corruption has been found in Thailand (King Prjadhipok's Institute 2007) in relation to bureaucracy and administration. This is referred to as common bureau pathologies which lead to maladministration (Pratchayaprut 2003). Importantly, in order to make the policy transparent and legitimate, the policy process needs to be respectful of the public and open to them at every step. Transparency has some linkages with cronyism in Thailand as Warsta (2004) states that it seems like 'godfather' in mafia society. The mafia will protect or shelter their paid customers and will take advantage from other group of clients. Besides, client-patronage system that the subordinates would not reject if they have been required to work or serve the higher position leader and that they offer some small gift of good will (Warsta 2004). It can be argued that because client-patronage system has rooted for long time since Thai people are used to the system. The interviewee NE_2 addresses this:

> *"If you want to work where you would like to be, either with your family or friend, you could just request secretly with your boss. You may be asked to provide some amount of money or it could be a luxurious gift. Regarding*

> *biodiversity projects there are a number of projects that have not been approved because no insiders or politician approve. This topic is not a public talk but most people are aware of this in case they may have to choose this way of action".*

It can be said that transparency is an important factor in achieving an effective policy process and this needs careful consideration and implementation within the Thai context. Therefore, cronyism demonstrates Thai society that it is quite likely to bring close friends or family members into politics without having any suitable qualification to work.

6.3.4 Multiple and Appropriate Participation Methods

Decisions regarding the biodiversity policy were already made before any public participation programme was conducted (ONEP 2006). From the research findings, officials from central government did not apply the participation techniques to engage and provide information to those communities affected by the biodiversity policy.

Policy documents were distributed to communities, schools and local government offices only after implementation of the policy. Nonetheless, attempts were made to let the public know about the policy and accept it, by giving information about the policy and educating the public through either formal or informal meetings, or seminars in different locations. Once the cabinet had approved the policy, interactive activities such as exhibitions were held in many public locations such as the community's convention hall, local government office or local school. Because these activities were not initiated at an early stage in the policy but rather when implementation had been undertaken and seemed to be unsolvable, these efforts were only partially effective in solving the problem of biodiversity management.

6.3.5 Adequate and Accessible of Resources and time and place availability

Information is a fundamental element of the policy process (Crabbe and Leroy, 2008). In this study, two-thirds of stakeholders pointed out that they did not receive accurate information and found it rather difficult to gain access to relevant information. A number of factors which can be shown to have influenced the resources were identified based on the interviewees' opinions and the relevant literature including, accessibility, sufficiency and correctness, comprehension, presentation, timing and venue.

In this research, more than 80% of the stakeholders, particularly those from the three remote regions, stated that one of the weaknesses of this case study was that the local people and officials had difficulties in getting access to all the data and information related to the biodiversity. A number of stakeholders stressed that
"*The problem is how to get full access to the relevant information*." (Interviewee N_1, N_5, N_6, NE_1, NE_2, NE_6, S_2, S_4)

One interviewee talked about accessibility to the biosphere reserve information as follows:

> "*Only little relevant information is received here. Although there is an environmental network in the area it did not help because central government managed the whole system. The most updated information we could get was from Internet, and mainly in English. The Thai version is not updated at all.*" (Interviewee S_2)

Access to information was found to be a crucial problem in a number of environmental policy studies (Gysen *et al*. 2006). The findings showed difficulties with either physical access to information or its arrival, as some decisions had already been made before the public became involved. Stakeholders pointed out that information should be more accessible to the public. They required access to all relevant information since they were affected by implementation of the policy. One interviewee indicated that "*The authorities should provide the public with the most updated information.*" (Interviewee NE_9)

> "*We searched for the information by ourselves. Luckily, one of our neighbours raised our awareness and we established a group of local villagers for the environment. We shared information received through Internet. We did not understand why the government did not provide us with access to the database linked with important environmental data and information. We waited for the government to solve this problem because we cared for our local mangrove.*" (Focus group S)

These findings support Article 8(j) in the Convention on Biological Diversity (CBD) address about traditional knowledge and indigenous and local communities (CBD 1992). Public involvement is another key element in managing nature conservation successfully (Papageorgiou and Vogiatzakis 2006). In addition, a number of local villagers complained about the roles of government bodies in that they did not gain sufficient support from them. This can be explained below:

> "*We needed more support from the government, yes, from the local officials. We did ask them for updated information although we expected that we would be informed instantly as soon as news posted. Did we expect too much from them? They should have worked harder if they had wanted to spread the information.*" (Focus Group N)

According to the findings, most interviewees from the remote regions stated that the information they received was not sufficient regarding biodiversity in Thailand and their local community in particular. Therefore, they felt that the information should have been spread widely so that they could understand biodiversity clearly. A need for sufficient information was also indicated, including sharing information. This can be explained in the statement below:

> "*Actually, we did not know that we lived in the biosphere reserve area. We only knew that the place here is Suthep-Pui National Park. At least, we should*

> *be told about where we lived and how we could take care of our area. Only the Royal Project provided us information but it was not sufficient in terms of the amount of data. The provincial government did not pay much attention to this as long as the problem did not appear here. We trusted the Royal Project the most. Of course, we needed more information from the government, Chiangmai Province in particular.*" (Focus group N)

It could be implied that, in this case, the information was not adequate and the understanding of local residents affected by the government implementation. A similar case that the needed institutional links between community-based conservation and protected area management is given in Hoole and Berkes (2009).

On the other hand, biodiversity hotspots have been specifically categorised within Thailand. However, it was found that there was lack of links with international biodiversity knowledge. The insufficiency of the basic biodiversity theory was presented in a case from central government. In fact, this is the key body responsible for formulating biodiversity policy. An example of this is the linkage of biodiversity hotspots approach by Myer *et al*. (2000). This can be explained from the statement below:

> "*There has been a project concerning hotspots in Thailand for a couple of years. We do have our own hotspot. It is concerned of data of which plants and animals in each province existing accordingly. I am not sure I heard of the biodiversity hotspot before but my opinion was that we did collect our data as planned. What is different from the Thai system? Why do we need to adopt the international biodiversity approach when our own was already appropriate?*"(Interviewee C_1, 2009)

Although the biodiversity policy-makers are highly experienced in biodiversity-related issues, global trends are occasionally neglected by them. Crabbe and Leroy (2008) mentioned that appropriate and sufficient information is related to the typical features of the

environmental policy, which in this case is biodiversity policy. This could lead to effectiveness in the implementation of policy (Mickwitz 2003; Gysen *et al*. 2006).

Although a problem of inadequate information in the case study was found, a related issue was that the provided information was controversial. One interviewee indicated that

> "*The information involving changes in nature conservation was provided to the local communities in order to support and inform them earlier if they need to do anything or participate in any project*" (Interviewee NE_7).

In this study, a number of interviewees claimed that the information was rather difficult to understand with too many technical terms (Focus groups N, NE and S). Moreover, a number of the government officials also stressed that assistance with the interpretation of biodiversity documents might enable them to understand more clearly (Interviewee N_1, N_3, NE_6, NE_5, S_4, S_3). The following quotation highlights this claim:

> "*From my point of view, there were too many technical terms in the biodiversity-related documents. It was a scientific definition which did not apply to local people. Clearer biodiversity-related documents would assist understanding by the locals. Don't you think it was ridiculous that I found myself confused with those terms even though I was an official working in nature conservation?*" (Interviewee NE_6)

This was an important issue in a number of studies. For example, research on nature conservation management has suggested that scientists and citizens could try to learn together so that a sustainable ecosystem will be maintained (Bormann *et al.* 1999).

However, four interviewees believed that the information about biodiversity was appropriately prepared in order to inform stakeholders. An example of this type of statement is given below:

> "*I thought that the information provided suited the stakeholders. The technical terms were clearly interpreted with a number of examples plus simple words. Nonetheless, we did need support from many sectors, not only government.*" (Interviewee C_3)

In this case, it should be noted that more than half of the biodiversity policy-makers in the Ministry of Natural Resources and Environment have educational backgrounds in biology, forestry and environmental science. It was found that a number of stakeholders needed more support from government in terms of interpreting the context and biodiversity-related information which they perceived as a new theory. The quotation below demonstrates this:

> "*Most of them needed to be translated from sophisticated Thai language into simple Thai language for villagers like us. We would like to see the books or brochures with more pictures along with understandable texts. We thought that the information was only used for academics instead of us, villagers.*" (Focus group NE)

These findings supported the study by Kay (1998) that scientists need to come out of their labs and in from their fieldworks and be directly involved in public and natural resources organisations, engaging the public in environmental decisions. It can be implied that moving from biodiversity as a science to policy is rather complicated for practitioners (Vermeulen 2004; Mace and Baillie 2007).

In this study, 90% of the interviewees were of the opinion that the biodiversity-related documents were poorly presented. This included central and local government officials and local people who found it difficult to understand the information on biodiversity and biosphere reserves which was not in a clearly illustrated pedagogic format. One interviewee pointed out that:

> "*Although the documents about biodiversity are in Thai, the formal language often made it difficult. We found it difficult to truly understand the information received from the central government, particularly one that was translated directly from English.*" (Interviewee N_2)

These people indicated that information should be easily presented to help stakeholders understand and become more interested. The following quotation demonstrates the importance of well-presented documents:

> "*The brochures and books should be better illustrated. Instead of technical terms, pictures and cartoons may facilitate better understanding. This may gain more interest from the local people and their children, as well as local officials who have little knowledge of the scientific approach to biodiversity. They were keen to learn new thing but with interesting, rather than complicated, information.*" (Interviewee C_{14})

Consistent with previous findings (Scott *et al*. 2005; Holmes and Clark 2008; Holmes and Savgard 2008;) that understanding the public's assumptions, values and concerns reflected the relevant stakeholders through the process which leads to better policy-making and learning.

Time and place availability

Time and place availability for biodiversity resource was found problematic at local level. There are a few libraries which provide books and information about biodiversity but very few locals have been there. Since they did not find biodiversity information is needed to learn and to understand more for conservation. Although at central level, there are a number of libraries contained many books and journals, information on biodiversity-related subject is not up to date. ONEP has its own biodiversity division (ONEP 2004) which provide published documents on biodiversity. However, it was found that not user friendly since the officials did not support much on service to public.

6.4 Outcome-orientated Evaluation

6.4.1 Impact and Influence of the Biodiversity Policy

The biosphere reserves where the fieldwork was conducted are comparatively different in several aspects. The administration and bureaucracy, local residents, budgetary issues, land use, research and training, communication and understanding, and government officials' attitudes all reflected the unique cultural, social, political characteristics in each region, north, northeast and south.

The administration and bureaucracy in the Maesa-Kogma Biosphere Reserve can be illustrated differently. As a matter of fact, Phuping Palace is situated in the reserve and the Royal family stays when coming to the north. The King's Royal Project initiated in late 1960s has helped locals who reside nearby, the hill tribe people in particular. Previously opium had been widely grown in the highlands and the reserve, and government attempts had not solved the problem (HRDI 2007).

It should be noted that sometimes it is quicker to implement an order from the Royal family to the Ministers or the government. This reflects that the administration in Thailand works within a client-patronage system (Bunyakorn 2006). Furthermore, Thai administration reflects the value of the Thai people as superordinates and subordinates, with personal connections, seniority and power (Bunyakorn 2006). Warsta (2004) also stresses that bureaucracy is related to Thai culture reflected in terms of crony politics. The following quotation is demonstrated this:

> "*It is very good that we have our king who looks after us. The government is not sincerely engaged in our well-being. Whenever the problem of the village was raised, the Royal Initiatives Project was the first body which really solved the problem. We did not want to contact the government officials as they are*

> *not service-minded and also looked down on us because we are hill tribe citizen.*" (Focus group N)

Regarding the goal of biodiversity conservation, smuggling of wild orchids in Sakaerat Biosphere Reserve still existed, as did deforestation for furniture manufacture. Compared Sakaerat Biosphere Reserve with the Maesa-Kogma Reserve, the conservation of biodiversity has been fairly successful. The number smuggling wild flora and fauna appeared to have lessened (The Royal Initiatives Project 2007; Tambon Suthep 2009).

6.4.2 Institutional criterion

In addition, there are also a number of programmes which support indigenous communities in accordance with Her Majesty the Queen's initiative programmes. "For example, '*Pah Ruk Namh*' (means forest loves water), '*Baan Lek Nai Pah Yai*' (means small house in large forest)" (RFD 2005). The Highland Agriculture Development Research Station in the areas which are shared and integrated to supply necessary assistance to other government departments and communities assist local people and provide them education so that local people will utilise biodiversity sustainably. Her Majesty the Queen's programme, with help from the government, provides local communities who reside in the forest with ways to integrate local wisdom into actual practice. This solved problems regarding of their quality of life and economic situation, and the local communities are grateful to the King and Queen (MONRE 2004). The project is mentioned below:

> "*Mechanisms will support villagers to have their forum, regulations, and volunteers as forest watcher, recognise villager rights and provide security to cultivate and reside on forest land with an agreement that there will be no enhancement of forest areas, and assist villagers with appropriate agricultural practices and rehabilitation of food bank forest which refers to their tradition and cultures. This programme is extended to any forest areas, including protected areas and highland watershed areas.*" (RFD 2005).

Furthermore, the King's Royal Project initially helped develop highland agriculture to the local residents and began to promote highland crops cultivation instead of shifting and slash and burn cultivation. As a result, local people, the local administration and Chiangmai Province gained more income from the highland crops and the reserve (national park) changed to become a tourism attraction. This reflects actual biodiversity policy implementation at a local level with less-effective outcomes and little access to the local communities. The problem can be solved if the decision-making process is decentralised to local communities and more flexible policy creation is adapted to the particular area (United Nations Office on Drugs and Crime (UNODC) 2005).

However, comparing to Maesa-Kogma biosphere reserve there is no royal palace near the Sakaerat or Ranong Biosphere Reserves. The administration and bureaucracy there mostly depend on a regional administration under the responsibility of the provincial office, Nakhon Ratchasima Province and Ranong Province, respectively. Local-level administration also plays an important role in both the Sakaerat and Ranong Biosphere Reserves.

In Ranong Province, there was a less bureaucratic system in the provincial administration because Ranong Province itself is small, with capacity to develop the local economy, but is currently not a first-class province for the economic boom according to the Ministry of the Interior (Department of Provincial Administration 2008). However, biodiversity-related organisations were found to have the similar connections and seniority as in biodiversity-related offices in Chiangmai and Nakhon Ratchasima Provinces. This presents the relationship of actors in biodiversity policy that complement and cooperate with other related ones.

Although Sakaerat Biosphere Reserve is in one of the main economic development provinces of the northeast, administration and bureaucracy in the area are different.

This is mainly due to the vision of the head of Sakaerat itself and an attempt to protect the reserve. The results show that the administration and bureaucracy under the Ministry of Science and Technology also differ from the other two reserves under the Ministry of Natural Resources and the Environment. The organisation of administrative bureau represents that according to the regional and local administration that the powerlessness and empowerment are considerably different to the officials who operate and serve on duty. Raub (2008) suggested that there should be less centralisation in the organisation, which results in better service quality. The head of Sakaerat is likely to be more independent because the reserve is partly funded by NGOs, both domestic and international.

Budget allocations for biodiversity are likely to fluctuate according to the political situation, and the vision of each cabinet and the ministries involved. Ranong Biosphere Reserve had received a significant budget. However, the potential budget is dependent on the head of the reserve. Budget allocation can be compared between the Sakaerat and Ranong Biosphere Reserves. Previously, the Ranong Biosphere Reserve had fairly good connections with the Ministry of Natural Resources and the Environment. Therefore, the budget had gone to the Ranong Biosphere Reserve continuously since the previous heads of the reserve also worked closely with superiors in the ministry.

However, after a change in the bureaucratic system, Ranong Biosphere Reserve became different in a number of aspects. For example, the heads of the reserve had been promoted and left to work in the ministry in Bangkok. Thus, the head of the reserve was replaced by a new official who was not keen to work in the reserve because his family were in another province and who later applied to move back where his family was. This case addresses a lack of interest in work on biodiversity although the role and responsibility have been engaged in bureaucracy, that needs to follow the order from the government witout freedom of word (Warsta 2004). Since then the reserve has received no maintenance. Soon after, the research buildings were found to Havre snakes and reptiles living inside. This reflects a lack of interest in current biodiversity practice on the part of government officials and the bureaucratic system. It should be noted that UNESCO has not sent any assistance for quite

a while and it was found that the head of Ranong Biosphere Reserve had neither the power nor the connections to make a difference.

6.4.3 Target Group

It should be noted that while some parts in the Maesa-Kogma Biosphere Reserve have been changed to a cultivated area (RFD 2005), a watershed management project, part of the King's Royal Project, is being operated by the Highland Research and Development Institute (HRDI) to restore the protected area. The accomplishments in terms of local residents development in northern Thailand by the Royal Project have proved to be quicker and more effective than only government projects (HDRI and the Royal Initiative Project 2007).

However, regarding local communities, conflicts between the Sakaerat Biosphere Reserve and local residents appear to have decreased because the head of the reserve has been working there for more than seven years. There are a few campaigns to increase people's environmental awareness, in primary schools in particular. Vermeulen (2004) addresses that local people should be included and educated in terms of improving relationship between the government and themselves. This will help in better cooperation for biodiversity conservation. More importantly, some members of the local communities are hired by the reserve to work together. This assists and promotes integration of the reserve with locals. Likewise, locals' perceptions of the reserve are better since there has been a friendly administration rather than a formal bureaucracy. It should be noted that the reserve has been trying to meet UNESCO's main objectives by establishing a biosphere reserve that engages with local people in order to conserve biodiversity, and this is one achievement of the reserve:

> "*I think we have been successful according to the UNESCO objectives. The locals would prefer to come to join in with the activities at the reserve. We offer several activities including family and friends participation in*

> *biodiversity conservation. Most locals bring their children and have found it useful. They usually come back to find other interesting programmes which the reserve offers.*" (Interviewee NE_2)

The head of Sakaerat Biosphere Reserve builds connections with both internal and external agencies. This is an apparent example of a government official who is willing to work. More importantly, comparing to the case of Ranong Biosphere Reserve, the head of Sakaerat also has family living in a different province but he can cope with this and adjusts to his job in the reserve, showing that individuals are different although they are under the same circumstances (MOST 2008).

6.4.4 Societal criterion

Not only has it achieved a relationship with locals, but the Sakaerat reserve also serves as a research station providing necessary and basic scientific devices, microscopes, a scientific laboratory, etc. Funding is currently received from the Ministry of Science and Technology as well as external sources. It is an environmental research station in between two national parks lying within a diversity of flora and fauna. However, the reserve has faced a number of problems regarding the number of employees working in it. As a result of budget allocations, the number of employees has dropped and this actual situation of human resources in the reserve is never reached the central government, although the regional and local authorities have filed urgent biodiversity-related requests. This also reflects that Thai society is relatively connected and that corruption has not yet been eliminated (Damrongchai 2003). An explanation by an interviewee is presented below.

> "*Some of us worked for the reserve for more than three years. We found it good that the reserve hired locals in order to assist the government. We were pleased to be involved in biodiversity management so that we could protect the environment for our children and family. Thank you the head of the reserve, who sincerely encourages and engages with our community.*" (Focus group NE)

With regards to their education, three of the previous heads of the Ranong Biosphere Reserve had personal contacts within biodiversity via international and domestic sources who apparently support management of the reserve. During 2002–2004, Ranong Biosphere Reserve was properly maintained with financial support from the Japanese International Cooperation Agency (JAICA) to construct buildings and obtain tools for the reserve (Ranong Biosphere Reserve 2004). In addition, the reserve supported international researchers who came to collect the data in the area which is a centre for mangrove and sea life studies (MONRE 2005).

6.5 Barriers to the Effectiveness of Biodiversity Policy Development and Implementation

An investigation into the barriers to an effective policy process is crucial as it will enable identification of the missing elements of biodiversity policy formulation and implementation. This section is significant as a means to explore, identify and analyse the barriers that can be assessed as having a significant influence on biodiversity policy in the case study of Thailand. Empirical results of the case study, drawn up from the interviewees' perspectives, and the relevant literature are presented and discussed here.

6.5.1 Structural Barrier

6.5.1.1 Traditional Culture of Decision-making in Thai Institutions

In this study, 80% of the interviewees felt that a traditional culture of decision-making in Thai institutions impeded their participation. Information from them indicated that the decision-making process in Thai culture was mostly top-down, from the government to the developer and academics, and then to the public. In this case, a bottom-up approach was restricted to stakeholders sending comments to the government; however, there were no appropriate responses from the governor.

Decision-making at the policy level is extremely important and affects a great number of citizens, but this kind of decision-making process is frequently closed to the public (Awakul and Ogunlana 2002). Clearly, this policy process was initiated by the government and who had full authorisation to control everything about the policy implementation process. The government argued that all of its actions were lawful or it was authorised by law to do everything to complete the policy.

This finding supports a study by King Prajadhipok's Institute (2007) which stated that, traditionally, the Thai government's role was to specify the policy and then bring it into practice. The government has full authority in the decision-making process and can command all relevant functions in order to achieve the policy's target. This concept has been deeply embedded in Thai society for a long time and reflected client-patronage system that the superiors are so powerful that can take control of the lower class citizens. This may lead to corruption since the government does not allow media or NGOs to be involved so that they could accept bribes in the implementation process (Warsta 2004). This was a significant barrier to effective policy process.

6.5.1.2 The Thai Bureaucratic System

In Thailand, most government officers are accustomed to a bureaucratic system in which hierarchy is significant. They obey the chief and hardly listen to their citizens, while lay people have to listen to their governors (Bureekul 2004). Vatanasapt *et al.* (2004) stated that although the 1997 Constitution aims to reform the practice of bureaucratic ownership of national resources towards more citizen stewardship, the public's role is limited. Klein (2003) and Charuvichaipong and Sajor (2006) indicated that decentralised functions, government officers and local politicians remain captives of an elite domination. They did not want to lose the power and influence they had enjoyed for many decades (Anukansai 2003; Warsta 2004) and so did not support the promotion of participation at a grassroots level in accordance with the policy process. The bureaucracy is also influenced from the

client-patronage system that the superiors' orders are responded by subordinates without rejecting. This also reflects Thailand seniority system that older people seem to be right in doing things.

Not only are they unaccustomed to being questioned by the public, but civil servants also refused to countenance political reform (Klein 2003). Similarly, King Prajadhipok's Institute (2007) found that a number of Thai local administrative organisations did not have a clear understanding of their rights and the scope of their authority.

6.5.2 Legislative Barriers

6.5.2.1 Legal Framework

From the research findings, it was obvious that in the Thai context, the legal framework was a significant barrier to effective biodiversity policy processes. Three key problems were highlighted, there was: no clear guidance for direct participation in the decision-making process, no support and clear legal obligation for implementing public participation involved in policy process; and limited distribution of information by the government.

Mallikamarl (1996) suggested that because these laws have been used for many decades, many of them need to be revised. This is because they do not respond to existing problems or situations and several related laws and regulations cannot effectively collaborate with one another (ONEP 2004). Most importantly, these laws and regulations need to be corresponding to the new Thai Constitution 2007 which strongly promotes public participation, decentralisation and good governance. In addition, Thailand's biodiversity laws are not yet compatible with mainstreaming policy and international biodiversity framework. It is mainly because the government does not consider biodiversity to be high priority (NESDB 2005) and that Thai legislative system has not been up to date.

6.5.2.2 Legal Enforcement

A number of scholars point out that Thai environmental laws and regulations are not effectively implemented and enforced (Mallikamarl 1996; Bureekul 2000). It was found in this case that, not only was there a lack of biodiversity-related laws and regulations, but their enforcement was still a problem. Furthermore, implementation of policy is not successful because legal enforcement officer would not work effectively and lack of interest in it. Several officers serve the duty since it is necessary to work and earn money instead of work heartily. Financial issue influences in the working and living life of government officials and officers from national to local level resulted from low income salary then bribery is accepted in the capitalism society. Besides, lesson learnt from others that if they would like to be promoted then they have to follow the superiors, seniors and politicians orders which lead to crony politics (Phongpaichit and Baker 2004).

This is consistent with Gunes and Coskun (2005) that ineffective implementation and enforcement of the regulations disseminated public participation. Ineffective implementation was a key barrier to achieving an effective process. This could lead to more biodiversity-related problems. It may be because the corruption of government officials that accept bribes and delay the projects to earn more money become more common in Thailand and Thai people get used to this (Sangchai 2004; Warsta 2004). There is a need to implement and enforce the regulations related to biodiversity policy effectively.

6.6 Summary

There were several comments from the interviewees indicating that the biodiversity policy was not fully effective according to the set of criteria defined in Chapter 2. Table 6.9 shows a summary of the overall results of the evaluation of effective biodiversity policy for each criterion. In this study, not successful means that the biodiversity policy processes are not sufficient. For example, when policy development and implementation are partly successful in any criterion this means that the processes are not fully successful. Minimally successful means the biodiversity policy process is slightly effective with a number of deficiencies

against the criterion. While partly successful is less effective with few deficiencies and moderately successful means a moderate degree of effectiveness with one or two deficiencies. Finally, fully successful means there are no deficiencies in that criterion.

Table 6.7 A summary of the evaluation of biodiversity policy development and implementation of Thailand

Category	Evaluation criteria	Overall effectiveness	Supports/arguments
Process-orientated evaluation	***Clarification of goals***	Partly successful	The set of goals and stakeholders' roles were not clearly identified.
	Inclusiveness and adequate representativeness	Partly successful	The stakeholders were not included as local level representatives. However, some of them have better understanding of the concept of biodiversity.
	Transparency	Minimally successful	Most of the stakeholders were not involved in the policy formulation process. The related documents were not disclosed to the public unless requested.
	Multiple and appropriate participation methods	Partly successful	A number of participation techniques were applied to engage with the locals. However, these did not seem appropriate to the current situation.
	Adequate and accessible resources and time and place availability	Partly successful	The information related to biodiversity was partly included in the documents provided. However, accessibility to the biodiversity

			information was poor.
Outcome-orientated criteria	***Impact and influence of biodiversity policy***	Partly successful	Wild plant and animal smuggling still appears. Endangered species in the reserves were not clearly identified and the locals were not officially informed.
	Institutional criterion	Minimally successful	The patron–client system still exists in the Thai context with the constraints of an unstable political situation.
	Target group	Moderately successful	The locals changed to protect biodiversity and would prefer to participate if be informed in early stage.
	Societal criterion	Moderately successful	A number of stakeholders were satisfied with biodiversity management that they could be partly involved. However, not every biosphere reserve has employed a similar context.

Based on the overall results, it may be concluded that stakeholders and local people want to take part in the biodiversity policy process. Lack of consideration of people's concerns was a major problem in the policy implementation (Coenen *et al.* 2008). Simply recognising the value of citizens' perspectives and concerns was considered as a partial solution (Abelson *et al.* 2004). When diverse interests are involved, the ability to devise an appropriate problem-solving strategy is more important. The process requires mutual respect, knowledge and teamwork to create the best solution for every stakeholder (Wagner 1996). One of the significant problems of implementation of the policy was found that the transparency from top-down level was problematic that the projects and campaigns have

been delayed. The client-patronage system can be explained in this situation since only the superiors acknowledge the policy system but they would not distribute or open to public. This case also links to elite model that the policy has been formulated according to the elite's preference. Damrongchai (2000) addresses that in Thai context the corruption affected every level of administration as only small numbers of powerful people, high class society, control the country's laws and regulations. Moreover, recent poll presents that Thai people accept that corruption is a common action as long as the country is well-developed and that they could earn some advantage from (Assumption University Poll 2012). This attitude and mentality reflected from the Poll represent a number of current Thai people's opinions toward corruption and could lead the country in negative way (National Institute of Development Administration (NIDA) 2012).

Explicitly, participation of stakeholders is a significant component of any environmental policy process and particularly biodiversity policy since their involvement is a key factor in broad acceptance and successful implementation (Vari and Kisgyorgy 1998). There is a requirement that all stakeholders should have an open mind to accept more information and opinions. This is not only dependent on accurate and accountable information being provided to the public, but is also related to the adequacy and appropriateness of participants in the biodiversity policy process (Creighton, 2005). The next chapter presents the conclusion and recommendations for Thailand's biodiversity policy process, together with recommendations for improving policy development and implementation in the Thai context.

Chapter 7 Conclusion and Recommendations

7.1 Introduction

Following the evaluation of Thailand's biodiversity policy in the previous chapters, this study is important to investigate and analyse how the policy has been implemented towards national to local level. The process of biodiversity policy is a continuing challenge in Thailand. The question of how to be sure that the policy process is effective and results in desirable outcomes seems vital (Angelstam 2003). A systematic evaluation of biodiversity policy is recognised as a means to ensure acceptance of the process and outcomes, and, importantly, to develop knowledge of how to improve the practice (Ehrlich and Wilson 1991).

This study is important to Thailand because it highlights the significance of conducting policy development and the implementation of biodiversity management in Thailand, and identifies factors critical for the effective practice of biodiversity policy process. Biodiversity policy processes in Thailand were evaluated to provide evidence of what constitutes effective policy development and implementation. This was achieved by studying and determining stakeholders' perspectives and experiences based on evaluation criteria. Recommendations for effectively developing biodiversity policy were constructed and justified by integrating information from both the participants' interviews and the literature. These recommendations are vital to enable all stakeholders to be effectively involved in biodiversity policy decision-making and implementation.

7.2 The evaluation of biodiversity policy in Thailand: Conclusion

The evaluation of biodiversity policy was conducted in this research and the results were already presented and discussed in Chapter 5 and 6. Both process-orientated and outcome-

orientated evaluations are concluded to answer the research questions in Chapter 1 as follows:

7.2.1 Process-orientated evaluation: what is the process of biodiversity policy development and how are the bureaucratic and administrative systems reflected in the process?

The answers for the research questions presented in Chapter 1, based on the process-orientated evaluation of biodiversity policy in previous chapters, were found that it is unclear about goals settings in the policy. The process of biodiversity policy development was found that adopted from western format of policy and later adapted to Thai context (NBSAPs established by ONEP). There were a number of goals stated in the policy, NBSAP from the very beginning (established by OEPP). While the NBSAP is rather economic-attached, its overall goal of the NBSAP is mainly biodiversity conservation. It can be indicated that the country followed the NESDB as those are master plans leading the country. Furthermore, MONRE is engaged once the environmental or biodiversity issues have been raised at national level. ONEP is involved as a national focal point for biodiversity conservation for CBD but this is not an indication that biodiversity policy goals have been clearly established. ONEP and other biodiversity collaborators work together in a certain range of biodiversity policy, for example NBSAPs formulation will be publicly spread if ONEP received an officially request to share information.

Although the Constitution is stated the citizen right to know and participate in government projects which affected them, it was presented in the evaluation that the stakeholders were not promptly included at local level. The locals from all cases stated that only government officials have been informed in the policy development. It can be said that the 'inclusiveness and adequate representativeness' criterion was not successful in terms of stakeholders engaging with biodiversity policy at local level. The stakeholders at central government level (MONRE) were associated with biodiversity policy since their responsibilities and workplace are more convenient to get access to ONEP. On top of that,

from the actor-linkage matrix of central government level stakeholders demonstrated that the government officials relationships were complementarity or cooperation. These address the bureaucratic system in Thailand that the involved officials were under the system and know each other among work-related. They also are alumni from the same universities and friends as well. It can be said that cronyism associated with Thai context along with patron-client system that presented in the empirical data collected from the fieldwork.

While the relationship at central government level was found complementarity and cooperation, the actor-linkage matrix from the North, Northeast and South was found conflict in some cases between the stakeholders. Some academics and locals have so disparate concerns about biodiversity that conflicts appeared at local level in all reserves. It can be implied that different concerns likely began from different viewpoints and lead further into serious arguments such as budget issue. This may be linked with transparency because the government officials have been found received bribery. Evidently, the interviews also presented not only a budget issue but also disclosure of data which are related to transparency because the power of decision-making is solely at the central government level and there is yet no implementation of local biodiversity action plan in Thailand. It can be demonstrated that the patron-client system in Thailand allowed the government and the officials to conceal any information from the public. Because the system associated with the patron which can be described as 'superior' and the client as 'subordinate' that have been controlled for a long time since it was only a kingdom according to a socio-cultural perspective taken in to account in the policy evaluation.

On the other hand, the way of communication between the 'patron and client' can be implied in how multiple and appropriate participation methods were engaged in Thai context. It seemed to be considered as the order from the central government that all should follow. Whereas the policy was distributed to the local level via provincial office, the attention from the public was not raised because the local administrations had a little concern about the up-to-date biodiversity policy. Moreover, the local officials and people should be provided better understanding in biodiversity through adequate and accessible resources. It was evident in the results that they had difficulties in getting access to the

information. Time and place availability for the policy information was also found problematic in all reserves. Nevertheless, it was found that the locals in Ranong reserve gathered together to gain any environmental-related information, such as mangrove and marine resources, through the internet by themselves. The information has been perceived as too sophisticated to understand to the locals and grassroots. It can be addressed that the government had not prepared any information or resources for the locals so that they will have a better understanding to conserve biodiversity according to NBSAP strategies. It should also be addressed that the information of biodiversity conservation for children should be educated in the formal education system so that the children will have an opportunity to learn more.

7.2.2 Outcome-orientated evaluation: how effective is the implementation of biodiversity policy concerning biodiversity conservation in Thai context?

There is no clearer answer to the question of how effective the implementation of biodiversity policy is than the evaluation of the outcome of the policy. It can be demonstrated from the outcome-orientated evaluation which was conducted in previous chapters supporting by the established criteria for biodiversity policy evaluation. The impact and influence of biodiversity policy was found that it was partly successful. One of the reasons related to this was there was an evidence that smuggling of plants and animal was found in the Sakaerat reserve while the NBSAP was fully implemented in order to protect biodiversity. The influence of the policy was not well-received by the locals. However, the locals such as the North (Hmong hill tribe) paid attention to the King's initiatives projects more than governments'. It is indicated that Thai culture has paid respects to the royal family and been obedient to the traditional patron-client system which roots the country. It also linked to the institutional criterion that although the unstable political situation ruled by the military, the locals and officials still trust the institution in an unpleasant circumstance.

According to the target group criterion, the locals had paid more attention to biodiversity conservation as they showed that they did not clearly understand the concept of biodiversity

in accordance with CBD. It can be implied that the locals from developing countries were similarly perceived as less understanding of biodiversity conservation concept. However, the concept of biodiversity conservation was established only a few years ago and spread globally through CBD having signatories parties signed and ratified. In addition, it can be demonstrated that the local communities may not be well-educated perceived by academics and government officials but they have actually been living with the biosphere and utilising the plants and animals for their livelihood for ages. As such, the locals and their communities (stakeholders) should be early informed of biodiversity conservation policy by engaging media or learning agencies for all groups of age. The culturally sensitive policy evaluation should be engaged, more in the scope of policy evaluation at national and local level, not only in Thailand but other developing countries that must not be justified from the evaluators from outside. This, in fact, should be evaluated by the insiders from the local communities and any member of the reserves in order to move beyond the cultural difference and perception of misjudgement.

It can be concluded that the evaluation of biodiversity policy development and implementation in Thailand was found ineffective. It was not because the process of the policy itself, but the political, economic, socio-cultural and environmental issues that overwhelmed Thailand as well as other developing countries. The cultural difference should be noted that this made the differences in ones' perceptions, thoughts, decision makings and behaviours. The format of CBD, in accordance with NBSAP, may not be able to solve the problem of Thai biodiversity conservation and move beyond the cultural sensitivity issue in Thailand. A complete NBSAP itself will not accomplish in biodiversity conservation. In order to implement this to the locals, there is a need of local biodiversity action plan. The holistic evaluation of biodiversity policy at all stage in the policy cycle must be engaged with the stakeholders and made it transparent and accountable to the public. NBSAP will be achieved its objectives once the mentioned recommendations fulfilled and this will lead to the success of CBD at global level.

7.3 Research Implication

In Thailand, the concept of biodiversity policy process has become more and more acknowledged as a significant element of the decision-making process at all levels. Indeed, it was found that an increase in biodiversity degradation is often associated with an increase in conservation. In particular, biodiversity degradation has arisen in relation to arguments over natural resources policy because they would widely affect people and communities and have an adverse impact on society.

Although several organisations try to get involved in the policy process as the stakeholders, it has brought a lot of problems and complications to the society. Because the stakeholders pointed out to financial matter rather than taking into account of the issue of conservation of biodiversity. Therefore, there have been more failures than successes in trying to encourage an effective biodiversity policy process in Thailand. In particular, implementation of the biodiversity policy was recognised as an evidence of unsuccessful and ineffective management of biodiversity at both the national and local government level. The government faced strong opposition due to its political, economic and socio-cultural aspects, which eventually led to serious issues. Significant barriers to implementation remain because the conflict between government and the locals still exist. Problems in developing and implementing the biodiversity policy in Thailand stem from several reasons which need to be solved, as stated in Chapter 5 and 6. One of the reasons was an unstable political situation which appeared when the research was conducted. Significantly, one crucial factor that makes this process more difficult is the traditional decision-making process by the authorities, which always ignores the public. Yet again, it must be addressed about the patron-client system rooted in Thai society which caused some unclear barriers to the administrative and bureaucratic system.

On the other hand, the context of Thai biodiversity policy was found ineffective that the policy did not serve the goals as planned. This is stated in Chapter 6 which evaluates the biodiversity policy. Development of the policy was not transparent in that the stakeholders

were not included and early informed prior to the policy process. Laws and regulations related to the management of biodiversity have not yet been fully developed, particularly at local level. Although biodiversity management and conservation are clearly stated in the 2007 Constitution of Thailand, the authorities were not ready to engage with it due to the unstable political situation and the restructured bureaucratic system. Thai bureaucracy has been relatively slow in adopting key biodiversity policy instruments in order to manage biodiversity policy. In addition, the attitudes of government officials towards biodiversity management are perceived as fairly low bringing in performance. This is because of specific political aspects of the Thai bureaucratic system that do not allow subordinate government officials to freely participate in the policy process.

From a local resident's perspective, local people have little knowledge of biodiversity conservation and are sometimes confused by the environmental conservation in particular. The locals, however, the locals believed and implemented their traditional way of biodiversity conservation that adopted the global economic influence to settle their contemporary livelihoods. The socio-cultural perspective in this regard pointed that they still carried on the belief, norms and traditions. Local and provincial administrations have not fully promoted local participation in and inform knowledge about biodiversity; only local people have shared knowledge among themselves. It was clearly understood this situation as a result of yet-to-formulated local biodiversity action plan in Thailand. In addition, research and training related to biodiversity should be employed with regards to local knowledge and institutions in order to encourage local communities to be involved in the management of biodiversity. With regards to the central-government-level government officials, they should engage in biodiversity policy and local biodiversity management with wider visions and put forward the local communities to the sustainable development at local level.

Budget is one of the key aspects which may delay the biodiversity policy implementation process. Since Thailand has faced unstable situation and the government changed periodically, the economic situation is similarly unstable and unpredictable recession.

NESDB and Ministry of Finance have responsibilities in charge of budget allocation. According to the government statement, however, biodiversity management has not been brought to higher priority than economic and political ones. As a result, the financial support from the government is likely to urge the economic condition rather than offering to the biodiversity management or environmental conservation in general.

Furthermore, change of land use is another important topic in biodiversity policy. Changes have occurred in areas of abundant natural resources. Since the trend for eco-tourism was introduced into Thailand, more people have begun to travel in search of recreation. As a result, regions close to protected areas have been sold for use as tourist resorts, trees have been removed, and different cultures and strangers have been brought into the area. Moreover, a number of tourists had expressed an unusual behaviour for example cutting trees for more space for paragliding, abusing the plants and animals in that habitat. This affects the stakeholders, particularly the local people who benefit from the reserves

On the other hand, the policy process must begin and include public participation before any decisions are made. The public should be involved early enough that they can have a reasonable expectation of influencing decisions. This point is clearly stated in both the 2007 Constitution and the previous one. However, most policy involvement occurs very late in the decision-making process. In many cases, environmental policy processes were initially developed, and approved or constructed without the input of stakeholders. Thus, effective enforcement of environmental laws is essential. They should not be left to chance. The authorised agencies, in particular ONEP, who are responsible for initiating the policy process and MONRE in general, should also oversee the enforcement of environmental laws. In addition, the government have to enhance institutional support, in particular that of independent organisations as listed in section 67 of the 2007 Constitution, academic institutions and non-governmental organisations (NGOs) to monitor and enforce the relevant law and regulations.

Regarding public participation, it must be included at every step of policy development and implementation. In particular, biodiversity policy evaluation and implementation are necessary to reduce barriers among stakeholders at initial stage. Participation in policy development can also lead to the early identification of problems, and help foster public acceptance. Indeed, there should be a new regulation regarding these issues. In addition, evaluation techniques should be varied and flexible since the evaluation criteria are too broad and might not suit Thai society. A combination of mixed methods is recommended because different evaluation techniques can complement each other's limitations. This should be stated in ONEP recommendations regarding the biodiversity policy process, particularly in the implementation stages to allow participants more opportunities to be involved in the process. In particular, they might select the time and favourite methods for their involvement.

Nevertheless, it can be demonstrated that bad governance, lack of transparency and accountability and corruption among the Thai authorities are key factors that affect the effectiveness of biodiversity policy processes. These problems in Thai bureaucracy and the decision-making process must be solved immediately so that Thai citizens are able to effectively protect their commons and rights. Nonetheless, more details on how to overcome these problems are beyond the scope of this study. Thus, this research recommends these issues for future research as a focus for how to further improve biodiversity policy process in Thailand.

Besides, the constitution, laws, rules and regulations must be reformed to ensure that biodiversity management is fair, transparent and supports a public participation strategy within the Thai government administration. Law reform initiatives, in particular the drafting process, should use a participatory approach to biodiversity management. The reforming process should let all stakeholders, in particular the public, academics, relevant government agencies, NGOs and local residents be involved in making their opinions known during the writing of these laws in order to achieve their goals.

The definitions of 'stakeholders' should be clearly stated within the Thai legal framework to prevent confusion over who should be involved in the policy process. Stakeholders should be defined as any group or individual who has a stake or an interest in, or can affect or be affected by, the outcome of the policy. Normally, those involved in the Thai environmental policy process system should include the general public (including affected communities) and other stakeholders, including local people, consultants, NGOs, authorised agencies, such as officers of the ONEP and the media. Moreover, the definition of 'biodiversity' should be easily understood by all stakeholders and the public. A keyword may help make this clear for local people and remote government officials.

The authorities should carefully plan and organise public participation in biodiversity policy. The role and influence of the public in the biodiversity policy process should be made clear in advance, before the forum is held. The participation issues need to be clearly framed and communicated before the policy development process can commence. These issues need to be clearly stated in the practical guidelines and regulations, in particular in ONEP regulations because ONEP is responsible for biodiversity management and policy. Motivation and effort are needed from all stakeholders. The government must be more proactive and show stronger leadership in encouraging biodiversity protection. The government must provide sufficient resources to support biodiversity management and policy. Moreover, the authorities should find out or create biodiversity management techniques that suit the Thai context. In particular, NGOs should be supported to play a greater role in biodiversity management.

To achieve an effective biodiversity policy, a prosperous attitude, understanding and knowledge of biodiversity are needed. Practical training and biodiversity-related workshops should be conducted for the agencies concerned, the public and local communities and officials. The training organiser and trainer could be academics or a group resulting from cooperation among practitioners and authorised agencies. Biodiversity-related knowledge should then be widened as training will increase knowledge and help each party to have a clear knowledge of their roles, which might more effectively support their participation in

biodiversity management. Moreover, social and cultural aspects should be included to learn more about single society.

7.4 Limitations of the study

This thesis aimed to evaluate the effectiveness of biodiversity policy in Thailand by examining the process of biodiversity policy formulation and implementation. The various stakeholders had been engaged using the stakeholder engagement theory. The research results highlighted a particular investigation of the policy as they were based on a national biodiversity policy in a single case study in one country. The strength of the study relied on its controlled design. While the participants were selected using snowball sampling, the chains of networking were established separately to make them more independent and less bias. However, there are a number of reasons that the findings justify cautious interpretation and analysis.

First, the case study approach and the small number of participants limit the generalisability of the research beyond the context within which it was conducted. The issue of small sample size is difficult to overcome in this kind of study, however increasing the sample size would enable a broader generalisation of the study. It was also found difficulty in talking to the government officials at central government level, particularly once the sensitive issues were raised such as corruption and conflict at work. This stopped the researcher to ask any further questions because the participants were not open-minded and suddenly adjourned the topic.

Second, although the research participants from different regions had fairly high levels of education, the understanding of biodiversity conservation concept is relatively different based on their education background and work responsibilities. The interviewees also represented a small group of authority agencies and local communities. However, the interviewees were only a group of selected samples which had less concern on biodiversity conservation different from the evaluation criteria. Consequently, the questions used in the

research were not appropriate for all participants with less concern and understanding. Besides, more time had been used up for this matter.

Third, the established conceptual framework for evaluating the effectiveness of the biodiversity policy consisted of several criteria based on the available literature. There may be other significant criteria that should be included in the framework, such as financial issues, which may be complicated and difficult to assess accurately. Therefore, the authorities should consider these issues to achieve complete evaluation of the policy process in other practices.

Fourth, because a case study is a common approach in social science, it was selected for this research to capture identical characteristics in a distinct context of one country, Thailand. However, a case study is only an approach to represent an entire population from a particular context since there are difficulties with the cumulative generalisation of knowledge from the policy evaluation.

The results of this study are generalisibility based on the selected case study. Under the same conditions of a Thai context, in particular the Thai legal framework, it could be assumed that the research findings are the representative of the whole practice of the biodiversity policy formulation and implementation in Thailand. However, whenever the contexts are changed, this research may represent only a set of cases with similar characteristics, such as under an unstable political situation which rather appears in developing countries.

7.5 Recommendations for future research

Recommendations for future research in Thailand are as follows.

First, the thesis was limited to a single case study, with three sub-cases, the findings support and advance empirical study respecting an effectiveness of biodiversity policy

processes in Thailand. It is important to continue this line of research with additional studies of biodiversity policy process for other perspectives. A comparative case study is a good strategy to provide more information on the biodiversity policy to allow generalisation of conclusions regarding practice in the region. These differences might have significant consequences for the consideration of effectiveness of biodiversity policy which would be useful for future practice.

Second, in order to find out the suitable techniques for biodiversity policy processes in Thailand, an evaluation study of particular environmental policy techniques, both in terms of biodiversity policy and related environmental issues, is required.

Third, there is still a lack of accepted evaluation criteria for biodiversity policy. There is a need to develop publicly acceptable evaluation criteria which could be widely applied to other fields of policy studies.

Fourth, although this case study is important because of its extensive characteristics which make it suitable as an evaluation study, as described in Chapter 4, the policy was initiated quite a while ago and some of the context has changed. For example, the 1997 Constitution was replaced by the 2007 Constitution. Although the key concept of biodiversity still exists, there have been minor changes in some matters. An in-depth investigation and study of current biodiversity policy is recommended in order to understand current conditions and practices of biodiversity policy process in Thailand.

Fifth, there has been an increase in the use of technology in biodiversity policy which is likely to play an important role in the future. Interactive Internet use is the cheapest technique for gathering public opinions and comments (Kingston 2007). For example, a list of e-mails and websites has been widely used for information sharing by a number of government agencies. This technique is suitable for a country in which there are a number of Internet users. In Thailand, however, use of the interactive Internet is limited to people in large cities.

Finally, in the very intensive situation of biodiversity problems in Thailand, it might be difficult for new biodiversity policy processes to be drafted because Thai citizens have become more concerned about biodiversity issues. Thus, a study on biodiversity policy or implementation, or the outcome of the policy after implementation in the community is useful. In addition, a study on biodiversity policy within Thailand along with biodiversity management is significant and needs to be undertaken. These studies are expected to reduce the severity of biodiversity problems in Thailand.

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Appendices

Appendix A Interview questions

Date……...Place……..
Interviewee…….
Position…….Case study……..……
Beginning time…….Ending time……

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Part I. Interviewee's personal background

1.1 Gender

…..Male …..Female

1.2 Age

…..less than 20 …..21-30
…..31-40 …..41-50
…..51-60 ….. more than 60

1.3 Religion ……..

1.4 Education

…..Primary school
…..Secondary School
…..High school
…..Undergraduate, specify……
…..Postgraduate, specify……
…..Other, please specify……

1.5 What is your role as a stakeholder in biodiversity policy?

…..Government
…..NGOs
…..Academics
…..Local government
…...Local residents
…..Other please specify……

1.6 What is your work position and responsibility?

…..Executive –level position……

…..Management-level position……

…..Operation- level position……

…..Other position……

1.7 Which stage of the policy process are you related to?

…….Agenda setting stage
……..Policy-making stage
……. Decision-making stage
……..Implementation stage
……...Monitoring stage

1.8 Work experience in years ……

1.9 Where are you originally from? How long have you been working in this organisation? And why do you choose to work in this organisation?

……..

1.10 Do you have a part-time job? Is it related to biodiversity?
……

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Part II. Thailand's bureaucratic and administrative system towards biodiversity policy

2.1 What is your role and responsibility related to biodiversity policy? Please give examples of your job and daily task.

2.2 Have you ever heard about biodiversity or Convention on Biological Diversity? Please explain how you understand 'biodiversity'

2.3 How is your perception of Thai bureaucratic and administrative system?

2.4 How do you participate or take part in biodiversity conservation?

2.5 How do you cooperate with other organisation related to biodiversity?

2.6 How do you receive information about biodiversity?

2.7 How is your job related to the same ministry authorities? (or local government authorities)

2.8 Have you every taken part in biodiversity policy process, either formulation or implementation of the policy? Please explain

2.9 Are there other stakeholders in your organisation take part in biodiversity policy process? Please explain

2.10 Please give examples of obstacles in biodiversity policy in Thailand

2.11 How would you contribute to biodiversity conservation in Thailand? Please explain

2.12 Have you or your family member ever joined any activity regarding biodiversity conservation? Please explain

2.13 Please give example of the culture in your region which you consider that is related to biodiversity

2.14 Have you ever participated in any biodiversity education or research?

2.15 Have you every participated in any activity in your local area?

2.16 Is there any difference in your working environment since 1992? Please give example.

2.17 Is there any established civil society in your local region which related to biodiversity conservation?

2.18 How do you utilise biodiversity in your society? What about local wisdom or knowledge related to biodiversity?

2.19 Is there any library or information centre in your region? Please give example.

Appendix B Focus group topic guide

I. Introduction

• Welcome the group and raise questions about their background

• Ask them how they know about 'biodiversity'

• Question about local government projects

II. Biodiversity policy evaluation

Q.1 How have you been involved with biodiversity conservation?

Q.2 How do you participate in biodiversity policy?

Q.3 How does your local government present biodiversity conservation?

Q.4 Tell me about your activities/ participation with other locals?

Q.5 Who or what influences your decision/ action on your job?

Q.6 Did you have opportunity to present your opinions with local government? How?

Q.7 Is the nature and forest around you changing recently? Does it affect your livelihood?

Q.8 Is there any academics coming to give any speech or knowledge of biodiversity?

Q.9 Is there any NGOs coming to give any speech or knowledge of biodiversity?

Q.10 What about provincial government? Is there any participation or activity established by them?

Q.11 How is your perception of central government performance?

Q.12 How do you think about religion influences on culture and society? Please explain.

Q. 13Have you or your family member ever joined any activity regarding biodiversity conservation? Please explain

Q.14 Please give example of the culture in your region which you consider that is related to biodiversity

Q.15 Have you ever participated in any biodiversity education or research?

Q.16 Have you every participated in any activity in your local area?

Q.17 Is there any difference in your working environment since 1992? Please give example.

Q.18 Is there any established civil society in your local region which related to biodiversity conservation?

Q.19 How do you utilise biodiversity in your society? What about local wisdom or knowledge related to biodiversity?

Q.20 Is there any library or information centre in your region? Please give example.

III. Wrap up

• Do you have any additional suggestion on how to conserve biodiversity for your family and children in the future?

• Please give example of your livelihoods which you would like to see in the future.

• What would you like to pass on your opinions to the politicians regarding biodiversity?

• Thank you for your attention and participation